

THE LARYNGOSCOPE.

VOL. IX. ST. LOUIS, MO., DECEMBER, 1900. No. 6.

ORIGINAL COMMUNICATIONS.

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DENTIGENOUS CYSTS.*

BY FREDERIC C. COBB, M.D., BOSTON, MASS.

It may seem a strange thing to members of this association that dentigenous cysts, a topic more of dental than laryngological interest, should be chosen as the subject of this paper.

My reason for bringing the matter before you is that the diagnosis between cysts of the upper jaw and antral empyema, or antral tumors, is often obscure, especially in the minds of the general practitioner or dentist. The patient afflicted with a dentigenous cyst presents, on the affected side, an upper jaw distended and hard as bone. The location of the swelling is usually the side of the nose about the region of the ala, sometimes extending along the border of the nasal bones toward the eye. Examination of the nostril often, but not invariably, reveals a bulging of the outer wall of the vestibule inwards and upwards. The roof of the mouth may also be pushed downwards and inwards over a circumscribed portion of its area.

On lifting the upper lip the teeth of the upper jaw, or some of them, show a diseased condition and a pronounced swelling is generally to be noted in the alveolus.

This swelling of the alveolus may be firm or soft; firm where the bone still exists, soft where it has been absorbed by the ever-increasing pressure of the cyst.

Sometimes a sinus can be made out running upwards into the swelling, but more often none is seen. The tumor may even cover the roots of several teeth and obliterate the canine fossa, but

* Read before the sixth annual meeting of the American Laryngological, Rhinological and Otological Society, Philadelphia, June, 1900.

whether large or small it is, in my experience, invariably present. If the swelling be punctured the contents of the cyst will be found to be a thin, reddish or coffee-colored serum, as a rule, sometimes more or less yellow, but rarely resembling pus. The symptoms usually are slow swelling of the face without suffering, except, perhaps, slight dental pain in or about the tooth roots.

Patients rarely present themselves until some weeks or months after the appearance of the swelling, a fact which shows how slight are the discomforts experienced. There is no history of nasal discharge, and transillumination by the electric lamp in the mouth shows ordinarily an equal amount of light directly under both orbits, but on the sound side the transmission of light below the orbit is better than on the affected side. If a trocar and canula be inserted into the tumor a clear or chocolate-colored fluid follows the withdrawal of the trocar, and if the canula be connected with a syringe, fluid pumped into the cyst will return around the edge of the canula and not, as in the case of the antrum, pass out through the nostril. It was objected in one of my cases by the dentist that this proof was not conclusive, as the antral opening into the nose might be obstructed, so that what I believed was a cyst might still be antral dilatation. To clear up the objection, after water had been pumped through the canula and had passed out around it, the trocar was again inserted into the canula and it was pushed upward toward the roof of the cavity. The distance was carefully measured to the orbit on the outside, and it was ascertained that the point of the canula was some distance from it.

The trocar was then made to pierce the roof of the cyst and was withdrawn, leaving the canula in situ. Water injected through the canula at once passed out of the nose, showing that the roof of the cyst corresponded to the floor of the antrum, which had been pressed upward by the cyst. In some cases the withdrawal of the diseased tooth allows a probe to enter the cavity, and comparison between the length of the probe inserted and the internal distance from the alveolus to the orbit determines the size of the cyst and its difference from the antrum. The evacuation of the fluid contents of the cyst makes a marked change in the appearance of the face, for as the lower part of the cyst collapses on puncture, it leaves a sharp, bony projection above, which feels to the finger almost like a dislocated nasal bone. Experience tends to show that after evacuation of the contents of these cysts, if free drainage be kept up, the bony projection tends to become less prominent, owing probably to absorption of the bony walls.

Whether this always occurs is, of course, a most important question, since, if such a retrograde process does not take place, some operation for the reduction of the deformity should be performed. With regard to the pathology of these cysts, I have not been able to get any very satisfactory explanation. In a paper read by Albarran before the Paris anatomical society, he comes to the conclusion that these growths are developed from the epithelial debris surrounding the teeth in the gubernaculum dentis or from those contained in the walls of the second teeth.

Baker* describes a case which he calls cystic, but which had acute symptoms and was filled with pus, thereby excluding it from the catalogue of pure cysts.

Heath† describes two kinds of dentigenous cysts, one due to the retention of unerupted teeth in the substance of the jaw and the other to inflammatory changes in the root membrane of an already completely erupted tooth.

In the first variety the tumor, of course, contains the tooth; in the second it does not.

The cases which I have to report were of the second class, since they contained no tooth. From a surgical standpoint, the important question to be considered is the condition of the tooth or teeth entering the cyst. The care of these should be intrusted to a first-rate dentist, and if diseased they should be removed. After extraction of the diseased teeth, the bony opening into the cyst should be packed until it begins to granulate well, when the gauze should be removed carefully and the edges of the opening allowed to cicatrize so as to leave an exit for the secretion. I shall give a short history of a few of the cases to make clearer the clinical picture of the disease.

Case I.—Mrs. J. F. F., age thirty-seven, noticed a gradual swelling of the left side of the face, greatest about the region of the ala and below the upper lip, but extending upward along the nose. Character of swelling hard, painless, normal in color, subject to alternate increase and decrease in size; duration six months. There was no nasal discharge. Puncture evacuated a thin reddish serum and at once decreased the lower part of the swelling, leaving a sharply defined bony prominence above, which gave the impression of a dislocated nasal bone. She was referred for examination of the teeth and treatment to Dr. Hardy, who kindly sent me a report that the "molar and canine were alive and the lateral crowned but root well

*Transactions of the Royal Academy of Medicine, Ireland, 1891.

†P. 367. Heath: "Injuries and Diseases of the Jaws."

filled and sweet." He opened the cyst again and drained forty-eight hours and washed with Seiler's tablets for three weeks to keep the opening patent. Nearly three months later she was seen by me and all signs of bony swelling had disappeared, although the cyst remained open and a probe still passed in to a short distance. It gave her no discomfort and did not discharge. The interesting point to me in this case was that so large a bony projection could subside entirely in so short a time as three months.

Case II.—B. R., age seven, entered the Massachusetts Hospital with a hard swelling of right side of face, duration three months, extending upward along the nose toward the inner angle of the eye and downward, filling the canine fossa. The eye tooth was loose and in the most prominent part of the swelling. He was etherized and Dr. Algernon Coolidge opened the cyst and, finding that the condition of the teeth entering it was bad, removed the lateral and canine. In the case of the canine a thin layer of bone around its middle only remained while its root for one-quarter of an inch moved about freely in the cavity. The swelling of the face, as in the previous case, was almost entirely without pain. The boy disappeared after a few days, but was seen two years and five months later, and his history is that after operation the swelling had gradually diminished until in a few weeks no sign remained. He has now a regular set of teeth, none missing, the only result of the old trouble being a slightly deviated incisor.

Case III.—Alice G. entered Massachusetts Hospital for a growth on her upper jaw presenting the usual appearance described in the preceding cases. The cyst was opened in Out Patients' Department and a straw-colored fluid evacuated. It was more difficult in this case to keep the orifice open, owing to the fact that the patient lived at a distance. Nevertheless, the cyst began to diminish, and in three months had almost disappeared. The dentist, who saw this case later, told her that the origin of her trouble dated back to the killing of the nerve of the canine tooth by a former practitioner who neglected to remove the dead nerve, which of course suppurated. The onset of the swelling indeed corresponded accurately with the date of the treatment of the canine tooth.

Case IV.—Mrs. M. B., age fifty-nine, entered the Massachusetts General Hospital with a very large facial swelling, in location corresponding to the preceding, extending below the upper lip from the left antral incisor to the first bicuspid. A trocar passed through the lower nasal meatus entered the cyst, showing how far it had raised the floor of the antrum. The cyst was opened, packed and

treated in this way for a long time without great improvement. Then the patient was sent to Dr. Edward Briggs, who removed the root of the incisor tooth onto which a pin holding a false tooth had been fastened. After drilling the hole for this pin a dentist had inserted a little wire obliquely so that its end made a foreign body in the alveolus. This was removed and the root itself taken out, cleaned and replaced and the pulp cavity of a neighboring dead tooth treated and the cyst at once began to improve. This case is interesting as showing that unless diseased conditions of the teeth are cured, surgical procedures alone are of no avail.

Case V.—D. H., male, age twenty-two, had noticed two months before a swelling of the upper jaw opposite first molar tooth, which was evacuated by a surgeon. It soon filled, however, and the patient was sent to the Throat Department for diagnosis and treatment. The swelling extended below the upper lip from the canine to the wisdom teeth. It was hard above, elastic below and the teeth corresponding to the swelling were badly diseased. He was sent to a dentist, who removed the two molars, and the condition subsided quite rapidly. Thirteen months later there was no return of the old condition.

Case VI.—Lillian N., swelling as described in preceding cases, hard and painful since it was lanced, which occurred about a month before entering the hospital. Cyst contents, as in preceding cases, was a clear fluid stained with blood.

The cyst, apparently, has been subject to great variations within the last two years, coming and going, as she expresses it, and usually lasting but a short time. Dr. Briggs' report on this case was: "Canine dark colored, does not respond to cold, gums over tooth show remains of probable fistula cicatrix, the pulp probably dead."

Case VII.—Calista T., age sixty-two, entered the hospital with the characteristic nasal and canine swelling, which had appeared painlessly twelve months before. No distinct connection with the teeth could be traced, since those connected with the cyst had been removed before her admission to the hospital. The cyst was opened and the orifice plugged for two weeks, when she was allowed to return home. She reports one year later that the swelling entirely disappeared shortly after reaching home.

Case VIII.—I should, perhaps, not report this case, since it is too recent to add to the value of the prognosis. It shows clearly the dental etiology and I shall report it briefly on that account:

Harry L., age seven, had slight toothache three months ago, followed by a hard non-sensitive, painless swelling, extending along

left nasal bone to the orbit. He had recently had a first bicuspid below the tumor removed the roots of which were badly decayed.

There was a small sinus at the site of removal of the tooth. The cyst was opened May 19th, but the bony deformity remained. A probe entered almost to the orbit; the opening is still packed every second day.

In this case the bony deformity will probably disappear, as it has in those cases hitherto cited.

From a careful study of these cases I am led to believe that the cyst is not, as Albarran suggested, due to epithelial secretion from the cells of the gubernaculum dentis, but rather that, as Dr. Edward Briggs believes, an inflammatory process originating about the diseased teeth, which is characterized more by excessive secretion than by active destruction.

To me the prognosis is also of great interest, since I could not have believed that so great a bony swelling could subside in so short a time as two or three months. Many of these cases were referred to us for diagnosis from antral disease and with a view to operation.

In the light of this series of cases antral disease can be eliminated and operation avoided.

The salient points are free drainage and careful dental treatment.

My best thanks are due to Dr. Coolidge for permission to report cases occurring in his clinic and to Drs. Briggs and Hardy for their careful report and examinations.

NOTES ON TURBINOTOMY.

BY CHEVALIER JACKSON, M.D., PITTSBURG, PA.

These notes are opinions based on clinical experience. It does not seem necessary to waste space by citing the cases in detail.

Turbinectomy will frequently cure ailments remote from the nose due to lithemia. Thus we all see an occasional case of asthma, vaso-motor coryza, hay asthma, rheumatism, chronic gastric catarrh and a host of other diseases whose predisposing factor is lithemia, get well after a turbinectomy. This does not always follow because of other etiological factors, such as auto-intoxication. Where it does occur it is probably due, not to relief of reflex irritation, but to increased oxidation, and we are never justified in promising a cure. The writer hopes that the foregoing will not be construed as an endorsement of indiscriminate clipping of turbinated bones in every case. In his opinion, however, there is no surer way of permanently reducing soft turbinal hypertrophy than by including the extreme edge of the bone in the clipping. The resulting cicatrix is adherent to the bone, and during the acute turgescence this cicatrix will be at the bottom of a groove, allowing a normal range of swelling on each side while preventing complete stenosis. Any operation including only soft tissues will yield more or less temporary relief from stenosis. The writer's opinion (not claimed to be original) is that the middle meatus normally is for respiration, the inferior meatus for drainage. The secretions drop downward like milk into the pocket of a breast pump. By all means, then, we should keep the drain widely open that the respiratory region above may be freely drained. When obstruction of the normal tear drainage is declared by the oculist not to be at the eye end of the duct, nothing will so frequently relieve as the clipping of the turbinated bodies, including a fringe of bone; and this even in cases where, on inspection, the turbinals seem normal. The damage is done during sleep when the turbinated body on the pillow side swells, as it does even in the normal nose. For the relief of nasal stenosis it is of little use to remove an anterior spur from the septum and leave the turbinal untouched to reform the spur by pressure, and to intermittently occupy all the space gained by the removal of the spur. If too much of the turbinal is removed, of course the well-known warming, moistening and filtering func-

tion of the nose will be less perfect, and even olfaction may be modified by diversion of part of the inspiratory air current from the middle to the inferior meatus. Like many another good surgical procedure, overdoing is the cause of its undoing. We are blinded to what good there may be in an overdone fad. The writer knows of an irregular fanatic on turbinectomy who for years has been cutting out both middle and inferior turbinals, on both sides, for the cure of every human ache and ailment wherever located. The number of cures is rather more than might be expected, due probably to better oxidation and the lessening of lithemic symptoms thereby; but laryngeal and other troubles, of course, follow and bring reputable rhinology into ridicule.

To anesthetize the entire length of the turbinated body, including the bone, requires a quantity of four per cent solution, equiv-



Dr. Chevalier Jackson's Turbinotome.

alent to about five grains of cocaine hydrochlorate, though of this probably not more than one grain is absorbed. Pledgets of cotton laid in contact with the field of operation should be dripping—not squeezed dry. The small amount that may trickle downward into the stomach, though always warned against by writers, is really of little consequence. One grain placed in the nose will produce more systemic disturbance in a susceptible subject than five grains swallowed into the stomach. The reason for this difference in absorbent power is not known to the writer. The pale, putty or olive colored, though otherwise robust individual, with a relaxed, flabby, constantly moist, clammy skin, such as is frequently seen in the Hebrew and Italian races, shows a peculiar susceptibility to cocaine. When a patient of this complexion is to be operated upon, the writer always has a large bottle of aromatic spirits of

ammonia within reach, and a dose is given by inhalation through the other nostril while waiting for the anesthetic effect, and the color of the lips is closely watched for the paleness which is the first sign of syncope. In intra-nasal surgery with cocaine anesthesia, speed is a desideratum. Many patients will stand a half minute or minute operation who will faint if the manipulations are prolonged. For this reason turbinectomy and turbinotomy with a saw for the bony section are frequently associated with syncope, sometimes nausea. Failing to find a satisfactory bone-clipping scissors, the writer designed a turbinotome that is slender enough to be used in an average of nine out of ten cases, yet by reason of a very broad bearing surface at the lock there is no springing of the blades, which will shear rigidly down through soft and hard tissues, clipping bone as neatly as though it were paper. The broad lock and heavy parts are all outside the nose and below the line of sight. Although the blades are straight, it is well to have two turbinotomes, right and left, so that the under blade may be outermost to go under the overhanging edge of the turbinated body. In ten per cent of the writer's cases there was not sufficient room to force the blade under the turbinated body, and then the saw had to be used, taking several minutes to complete a turbinectomy or turbinotomy, whereas the shears require less than a minute. Occasionally the posterior soft tissues will have to be severed with a snare or slender scissors, but these shears will, in the average nose, clip the entire length of the bone. The method of dissecting off soft tissues and nipping the bone has not yielded as smooth a result in the writer's cases as neatly clipping the redundant soft parts and including the edge of the bone.

AN ADENOID CURETTE.

BY CHEVALIER JACKSON, M.D., PITTSBURG, PA.

The possibility of an adenoid mass being drawn downward into the larynx after being detached by the curette had long been considered by the writer, but the accident never occurred until after the curette shown in the cut had been designed and used for some time. Then, strange to say, while temporarily compelled to use the regular Gottstein curette, the very accident so often considered occurred, necessitating prompt measures to prevent asphyxia. The spring, attached so as to stand about three millimeters away



Dr. Chevalier Jackson's Adenoid Curette.

from the cutting edge, has never failed to entangle the detached adenoid when in a single mass of large size. After removal of such a mass, a small curette, on which no spring is necessary, may be used to clean off small masses. Usually the finger nail is better than the small curette, and may be relied upon to do a more thorough cleaning. We have, however, such high authority as Randall opposed to thorough removal of every vestige as unnecessary if not safely impossible.

TREATMENT OF ACUTE INFLAMMATION OF THE MIDDLE EAR.

BY S. S. BISHOP, M.D., CHICAGO.

In the first stage, or before the serous effusion has taken place or the pain has become severe, gentle inflation and filling the ear with warmed pure or carbolated vaselin will suffice to give relief. When the pain has become intense, inflation must be practiced under very low pressure, as the movements of the drum-head, like those of an inflamed joint, are exquisitely painful. The patient in this stage should be put to bed to keep the temperature equable; a warm 8 per cent solution of cocaine or eucaine may be instilled into the ear, and, if deemed necessary, $\frac{1}{8}$ grain of morphia can be given in combination with $\frac{1}{400}$ grain of atropia for an adult. If for any reason the morphia and atropia should not be prescribed, bromidia may be substituted in teaspoonful doses, in water, every half hour until relief is obtained. Then it must be discontinued. The bowels and general health should receive proper attention. We have often found that leeches gave speedy relief. Two Spanish leeches may be applied in front of the tragus and two behind the auricle for adults. The external canal is stoppered with cotton so that the leeches cannot enter it. The skin is pricked until a drop of blood appears; then the leech in a two-drachm vial, with its mouth at the opening of the bottle, is placed so that its mouth covers the drop of blood. The vial is held in position until the leech takes secure hold. Then the bottle is removed and the leech is allowed to fill and drop off. This manner of applying leeches is given because few seem to be conversant with the subject, and this method removes the common objection to handling such repulsive creatures.

Especial care should be exercised to abstract the blood in middle-ear inflammation as much as possible from the region of the tragus, on account of the intimate relation of the blood vessels of this region and the anterior wall of the meatus with the vessels of the tympanic cavity. If enough blood has not been abstracted after the leeches fill and fall off, more can be drawn by applying napkins wrung out of warm water. If there should be any difficulty in stopping the bleeding from the leech-bites, pressure applied to them will succeed. The artificial leech is also an excellent device, but it occasions more discomfort.

The common practice indulged in by the laity of pouring oils, onion-juice, etc., into the ear is a vicious one, since these become rancid and irritating, and predispose to a subsequent inflammation. Poultices are also mischievous and favor suppuration and perforation of the drum membrane.

The writer has seen the following simple device, always convenient, give grateful relief: A piece of clean cotton is placed lightly in the mouth of the auditory canal. A pipe is partly filled with tobacco and lighted. Then a piece of thin cloth is placed over the mouth of the pipe-bowl and blown gently through, while the lip-piece of the pipe-stem rests against the cotton pledget. This filters the warm smoke through the cotton into the canal of the ear, and a grateful sedative effect is soon obtained. I do not remember to have seen this remedy mentioned, but its efficacy in the absence of other remedies has been demonstrated.

Fever calls for antipyrin or its equivalent in some febrifuge that is less of a cardiac depressant. Phenacetin and acetanilid act well. Quinine, the enemy of the ear, must not be used. It aggravates the existing hyperemia and conduces to a permanent deafness. Alcoholic beverages and smoking are prohibited, and any inflammatory condition of the respiratory tract must be vigorously combated.

If the pain and bulging of the drum-head continue, notwithstanding all efforts to counteract the disease, and rupture of the membrana tympani is threatened, it should be incised with the paracentesis knife, in the posterior-inferior quadrant, so as to afford the most perfect drainage. A warm 8 per cent solution of cocaine or eucaïne should be left in the ear for twenty minutes before the paracentesis, and, if the pain does not soon cease after perforating, more cocaine should be instilled, as hot as can be comfortably borne, so as to percolate through the perforation and reach the mucous membrane within. This will give relief. The incision should be a long one, cutting through the entire area of the postero-inferior quadrant vertically. The longer it is, the more it relieves the tension of the nerves of the membrane and the freer the drainage. The paracentesis knife must be absolutely sharp and should be dipped in alcohol before using. The perforation generally heals in a few days if no pus has formed.

After the pain is relieved, which should be the object of our first efforts, the ear may be inflated with as low pressure as will accomplish it. The air pressure in the tympanic cavity promotes absorption of any fluid contents and will be likely to improve the hearing. This treatment had best be administered for a few days once a day. As improvement progresses the treatments can be given at greater intervals until the normal condition is established.

Diet, exercise and clothing should be regulated on general hygienic principles.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, October 24, 1900.

WENDELL C. PHILLIPS, M.D., Chairman.

Sarcoma of the Antrum.

DR. FRANCIS J. QUINLAN presented a specimen of sarcoma of the antrum. It had been removed a few months ago from a man who had presented the usual symptoms of nasal obstruction. The mass had grown so rapidly that operation was deemed advisable. Dr. Bissell, of St. Vincent's Hospital, had exposed the antrum anteriorly and had found that the cavity and the entire malar region were filled with a sarcomatous growth. The diagnosis had been confirmed by microscopical examination; patient has made an excellent recovery.

DR. QUINLAN also presented a modification of the Bosworth share. By means of an extra and powerful ratchet it was possible to remove with this instrument hard, bony growths. Another feature of the instrument was an attachment by which the wire is held securely. The snare is made by Ermold of this city.

DR. WENDELL C. PHILLIPS presented a small polyp. He said that he had recently had under treatment a patient with suppuration of both the ethmoid and sphenoid cells on both sides. After the removal of the middle turbinate he had introduced a small Myles curette into the opening of the sphenoidal cavity on the right side, and on its withdrawal this small polyp had followed. It had apparently lodged in the mouth of the sphenoidal sinus.

DR. PHILLIPS also presented a cautery handle. The principal features of this instrument were that the parts were movable, but could be easily and securely fixed in any position. The cautery tip is placed in a revolving hub, and is secured by a screw nut. The contact button always remains uppermost during the operation. The instrument is the device of Dr. F. E. Neresheimer.

DR. MAX TOEPLITZ reported the following case: The history dated back five years, the child being now ten years old. About the only symptom was the mouth-breathing. At one time she had been treated by one of the members of this Section, and a portion of the growth removed. This had given relief for about two months. When first seen by him recently, there had been a swelling extending down into the region of the larynx. The tumor was about as thick as the thumb, and about two inches in length. There was a swelling in the nose extending outward as far as the vestibule of the right nostril. On examination of the naso-pharynx both growths were found to originate in the vault of the pharynx. He had diagnosed the tumor as one of those rare vascular fibromata described by Bensch. These tumors are not seen after the twenty-fifth year, and apparently are the result of a peculiar arrest of development. No tissue had been removed as yet for microscopical examination. He would try to remove the tumor by means of a snare introduced through the nostril. If this were not sufficient, and the tumor recurred, then the upper jaw would probably have to be removed, as done by Dr. Wyeth about four years ago.

DR. QUINLAN said that he had presented to the academy an exact counterpart of the one under discussion, except that its ramifications did not penetrate into the nasal cavity. He had seen three such cases, and they had all been of the myxomatous order. The growths had been removed by the cold snare, and none had recurred, so far as he knew. The introduction of a snare up through the rhinopharynx seemed to him the better way of operating than through the anterior nares. He believed these growths were of the benign rather than of the malignant order and were generally found among young people who were feebly nourished and whose hygienic environment was not good.

DR. ROBERT C. MYLES thought the growth looked more like a myxoma than a fibroma. The case referred to by Dr. Toeplitz had been operated upon most successfully by Dr. Wyeth. The patient had been presented to the Section some time previously by Dr. Lincoln. At the time there had been pressure in the antral, orbital and zygomatic region. At the operation the malar bone was sawed through above and below, the zygomatic arch had been broken and the large mass of vascular fibromata were removed from the antrum and speno-ethmoidal regions. The patient had done well for a few years, but had returned to the speaker with a recurrence. He had snared off several of the vascular fibromata, but the free hemorrhage prevented the complete removal. The growths ultimately atrophied

when the patient was about twenty-eight years old. He did not think these extensive and mutilating operations were desirable except in the class of cases just referred to where it was necessary to relieve the dreadful suffering and protect the patient's life; it was better in recurring cases to remove them repeatedly through the rhino-pharynx, and wait until the patient had passed the age of atrophy, which was usually from twenty to twenty-eight years, when they would be spontaneously cured. Therefore, in the case under discussion he would advise removal of the tumor without mutilation.

DR. J. F. MCKERNON said that he had operated upon a somewhat similar case in 1892, and it had been published in full in the Manhattan Eye and Ear Hospital reports. The tumor had presented an almost identical appearance with that shown this evening. The tumor had extended into the vault of the pharynx, and down the posterial pharyngeal wall and well on to both sides. It had been removed by the cold snare introduced through the nares. This had been done under cocaine, and very little blood had been lost. Under ether the lymphoid tissue had been removed with the Gottstein curette. About eight hours later a very marked torticollis had developed and had persisted for about eight days. The neurologist, who was asked to see the case, had expressed the opinion that the anterior arch of the vertebra had extended farther forward than usual, and that possibly a little more force than usual had been exerted in operating. Dr. Knight had reported this case as a naso-pharyngeal reflex. He had seen the case four years afterward, and there had been no recurrence. The pathologist had reported the growth to be myxomatous, not fibrous.

DR. T. W. CORWIN said that about one year ago he had seen a very similar tumor, which had projected from the naso-pharynx into the pharynx. In addition, an arm of the tumor had presented in the vestibule on the left side. The case had been under observation for about two years. He had removed several sections presenting an ordinary myxomatous appearance, and this character of the growth had been confirmed by the report of the pathologist. The tumor had been removed readily under an anesthetic by simple divulsion. When seen about three months ago there had been no recurrence. The patient was eleven years old.

DR. TOEPLITZ said that the tumor had been very carefully and thoroughly removed two years ago, and with quite some hemorrhage. He thought it was more myxomatous in the nose than fibrous, but fibrous in the throat.

The Diagnosis and Treatment of Some Functional Forms of Defective Speech.

DR. G. HUDSON MAKUEN, of Philadelphia, presented this paper. He said that schools had been established for correcting defects of speech, but their work had been unsystematic, and not far-reaching. At the outset one must have an alphabet of sounds. Such an alphabet had been constructed long ago, and had been very properly called the "physiological alphabet." Dr. Makuen's revised alphabet contains forty-four sounds, and serves as the standard for comparison in all cases. Every departure from this standard should be carefully recorded for future reference. The causes are often not easily discoverable. The three mechanisms concerned in the production of speech are: (1) auditory, (2) vocal and (3) oral, and each one of these may be again divided into central and peripheral. When the budding intellect begins to assume control of the hitherto automatic speech processes of the child there may be more or less friction in the peripheral mechanisms resulting in defective articulation, or stammering, or both. The auditory center is closely related to the motor speech center, and their development is simultaneous. Defects of speech may arise from either subjective or objective causes. In regard to prophylaxis the speaker said that the direction of good speech habits was comparatively easy, but the correction of faulty habits once acquired was much more difficult. In many children the demonstrative tendency to babbling should be encouraged, though occasionally it might be necessary to repress it. Examples of good speech should be given children, and the imitative faculty should be encouraged. Baby talk should be limited strictly to early childhood. Stammering is an acquired defect, although the nervous conditions predisposing children to this affliction are often transmitted through several generations. Persons so predisposed are very difficult to cure of stammering. A child exhibiting this tendency should be led unconsciously to speak slowly, and should never be allowed to describe exciting events. This requires some tact because the child should never know the true reason for these precautions. Many children have been made confirmed stammerers by having their attention called to the enormity of this offense. In the articulatory form of defective speech the person must be shown the positions which the organs of speech should assume in order to produce correct speech, and for this purpose a hand mirror would be found useful. Stammerers may or may not have marked articulatory defects, but they have no voluntary control of the peripheral

mechanisms. All stammerers experience a greater or less confusion of ideas, and this increases as the necessity for expression of thought increases. In the majority of cases the greater the desire for correct speech the greater the difficulty. The ready acquirement of the faculty of speech in the second year would not be possible except for a certain inherited faculty. Stammering is not always of cerebral origin. The child who has inherited a predisposition to stammer may be made to stammer by a fright or a fall. Stammering is a complex phenomena, and no two cases are exactly alike in their etiology or in their external manifestations. In all cases the nose and throat should be carefully examined, and all irregularities corrected. The free action of the tongue should be made possible by snipping a too short frænum. The treatment of stammering must be educational and carefully adapted to the individual. A study of the mental attitude throws much light on the treatment. It was a well recognized fact that the development of muscles is valuable only so far as it develops nerve power. The proximate cause of stammering exists in some derangement of the nervous mechanisms of speech. The normal functional activity of the cortical centers could only be restored by physiological exercise, and this can come only by conscious effort to regain voluntary control over the entire muscular system, but particularly those muscles immediately concerned in the processes of speech. Specially trained assistants are required, and they must work in entire harmony with the physician.

DR. J. E. NEWCOMB said that about eighteen months ago he had heard Dr. Makuen read a paper in Chicago on similar lines, and had seen him exhibit a patient at that time living in Chicago, who had formerly been under his care. The result in that case certainly spoke more eloquently than anything else could do regarding the correctness of the principles laid down by him.

DR. T. R. CHAMBERS recalled the excellent results shown in a number of patients presented by Dr. Makuen at the meeting in Philadelphia last May.

DR. D. BRYSON DELAVAN said that a general study of the work hitherto done in this field would impress one with the fact that it was either impractical or else unscientific. The reader of the paper had placed this important subject on a basis at once practical and scientific. He felt justified in believing that the results obtained by Dr. Makuen were unequaled.

The Pathology of Pharyngo-Mycosis.

DR. D. BRADEN KYLE, of Philadelphia, presented this paper, accompanied by lantern-slide illustrations. The object of the paper was to show the correctness of the statements made by various authors to the effect that there is a disease resembling pharyngomycosis which is not due to the leptothrix. While kerato-hyalin is normally present in a section of mucous membrane, it is in small amount and not easily demonstrable. The pavement epithelium hardens much more easily than the cylindrical epithelium. He was of the opinion that age and sex had very little influence on the disorder. Numerous whitish excrescences appear at the base of the tongue and in the solitary follicles. Frequently the disease is associated with dental caries. The general systemic condition does not seem to be a very important factor. The common site is on the tonsil. Probably a pathological alteration in the submucosa causes a change in the glandular secretion and forms a suitable nidus for certain bacteria. The sections exhibited showed the primary lesion in the submucosa, and hence it did not seem probable that the cause is bacterial. Laboratory investigations, undertaken with a view to showing the disease-producing power of the leptothrix, had been negative. In some of the cases of keratosis the presence of the leptothrix had been demonstrated.

DR. JONATHAN WRIGHT said that he had been interested in this subject some years ago, and at that time had been attracted by the statement that the mycelial threads of the various growths are sometimes found beneath the epithelium. He had accordingly examined a number of sections, and had come to the conclusion that what had been really seen was the hyaline degeneration pointed out in the paper just read. Mycosis was a term which should apply to the mycelia of a saprophytic growth. He had examined many tonsils and other lymphoid tissues in which the phenomena described in the paper were present without any thought that these pathological conditions had anything to do with mycosis. He was inclined to think that the connection between the mycelial element and the keratosis was more or less incidental. He understood the reader of the paper to mean that the changes in the epithelium and in the submucosa had rendered the soil favorable for the development of those microorganisms. He thought the reason keratosis is observed principally in the lymphoid structures of the throat is that these structures are especially subject to pathological retrogressive changes, and he believed it was these changes which Dr. Kyle had so carefully de-

scribed. This was especially true of young adult life, the time when mycosis is chiefly observed. The hypertrophied lymphoid tissue of the throat had been pointed out as the chief points of entry of various germs, but he was not disposed to accept this view unreservedly. The points of entry were probably those structures better fitted to carry infection—rather the lymphoid tissue which had not become hypertrophied, but it had been established beyond doubt, he thought, that, as a rule, tubercle bacilli enter the general system above the diaphragm. It was just such work as that represented by this paper which would clear up this important question.

DR. H. L. SWAIN, of New Haven, said if the tonsils were anything, they were like the lymphatic glands in other situations. When there is a tubercular gland in the neck, we do not say that the infection began there, but rather that it was stopped there. The same was true of the tonsil. The germ probably enters the structures around the tonsil and is arrested by the latter. Most cases of tuberculosis of the lungs begin in the lymphoid tissue at the bifurcation of the finer bronchioles, the lymphoid structures being in this latter, as in all cases, paths of detention, and possible elimination by destruction of germs by the cells, rather than points of entry.

All this would seem to bear out Dr. Kyle's observations that, as he has shown us to-night, the disease may begin in the tonsil tissue itself and work toward the surface.

DR. H. HOLBROOK CURTIS asked Dr. Kyle to explain the difference in the appearance between the two classes of mycosis—that with, and that without micro-organisms.

DR. W. K. SIMPSON asked what had been found the best treatment.

DR. KYLE, in closing, said that his paper was on pharyngomycosis, so-called. In cases that he had carefully observed the symptoms had varied. In the case specially studied, the membranous patches had been entirely limited to the pharynx, and the macroscopical appearance had not varied from true mycosis. In the case referred to there had been no bacteria etiologically associated with it, and he believed there was a variety of keratosis, as described by Brown Kelly and Richardson. He did not mean to say that there was not such a thing as pharyngo-mycosis, but that the condition studied by him was free from the presence of the leptothrix and unquestionably was a separate disease. The change seemed to begin in the submucosa and the keratosis was the result of this.

BRITISH MEDICAL ASSOCIATION.

Sixty-Eighth Annual Meeting, Ipswich, July 31, August 1-3, 1900.

SECTION OF LARYNGOLOGY AND OTOTOLOGY.

(Proceedings Continued from Page 313.)

A Discussion on the Pathology and Treatment of Toxic Paralysis of the Larynx.

P. WATSON WILLIAMS. There are, of course, many drugs and toxic substances which, by their influence on the cerebral cortex, along with other symptoms, may cause a paresis or paralysis of all voluntary muscles, and, therefore, may paralyze voluntary phonatory movements of the vocal cords, without going so far as to paralyze the reflex adductor or abductor movements of organic life. But using the term "organic paralysis" as implying involvements of both volitional and organic movements, for the purposes of our discussion, the term "paralysis" may be assumed to imply organic paresis or paralysis of one or more of the laryngeal muscles as distinguished from mere loss of voluntary movement, because we know that so long as the reflex centers in the medulla, the peripheral nerves, and the muscles of the larynx are intact, there is no true laryngeal paralysis, the reflex movements of phonation, respiration, and deglutition being unimpaired. We may, therefore, exclude from all consideration paralysis of cortical origin, the scope of our inquiry extending to laryngeal paralysis resulting from the direct bio-chemical influence on the lower neurones and the muscles they subserve, of substances in the blood or tissues, whether due to auto-intoxication, to the toxins resulting from invading micro-organisms; or to the pathological action of various drugs or other poisonous substances introduced from without.

There are two distinct possible methods by which the laryngeal paralysis may arise: (1) From the direct application of the toxic substance to the larynx, (2) from the selective affinity of various poisons in the blood for the laryngeal nerves or their bulbar nuclei. The entry of the poison directly through the laryngeal mucous membrane may, in some cases, account for the occurrence of varieties of myopathic laryngeal paralysis which are either never, or at least very rarely, observed in purely neuropathic laryngeal paralysis, for example, isolated paralysis of the adductors, the interarytenoideus, or of the thyro-arytenoidei interni, while the latter obtains in most of the neuropathic paralyses.

We cannot altogether pass without notice recent researches on the influence of various toxic matters on nerve fibres, and a point of some importance is the evidence tending to show that the axon does not receive all its nutrient material from the ganglion cell, but rather that it depends on local processes of diffusion, governed, it may be, to some extent, by the influence of the ganglion cell, but nevertheless being essentially a local process in the area of peripheral nerve distribution.

Hence we shall find that toxic paralysis of the larynx is more prone to follow toxic infections of the larynx itself than general toxic infections. Thus such affections as diphtheria and typhoid fever supply the larger number of instances of toxic laryngeal paralysis. Probably the frequency with which diphtherial neuritis primarily attacks the fauces is partly determined by the presence of the local lesion, just as the toxic agents of rheumatism or gout attack particular nerve fibres which are exposed to cold or injury.

The fact that in diphtherial paralysis the paralysis of motion usually declares itself first in the palatal muscles and is often confined to the fauces and spreads no further, and sometimes declares itself quite early in the course of the disease, even as early as the fourth day, suggests very strongly that the faucial paralysis is due to the local influence of the toxin absorbed at the seat of the membranous deposit, and that the occurrence of diphtherial laryngeal paralysis arises in a similar manner. Yet although doubtless this is true in a measure, and applies to those cases in which the muscles are paretic owing to inflammatory changes such as occur in the tissues in the immediate neighborhood of the primary diphtherial lesion, other clinically observed facts seem to indicate that the majority of cases even of faucial paralysis are neuropathic, and due to the selective affinity of the diphtherial toxin for certain portions of the nervous system. Thus, in 494 cases of post-diphtherial paralysis observed by Miller at the Southeastern Hospital only 185 were primary paralysis of the palate. Again, although the bulk of the palatal paralysis occurred between the fifth and fifteenth days, the bulk of the oculo-motor paralysis, 197 in number, occurred likewise between the fourth and the seventeenth days. Moreover, cases of primary paralysis of the palate do occur long after the angina; there is no proportion between the severity of the primary faucial disease and the severity of the paralysis; indeed, paralysis not seldom develops when the primary infection has been very slight, even so slight as to escape detection.

True toxic paralysis of the larynx may occur in typhoid fever, especially during the third or fourth week; it usually takes the form of abductor or total recurrent paralysis; and in a very few cases it appears to have been due to a bulbar nervous lesion rather than a peripheral neuritis, according in this respect with post-typhoid paralysis in other regions.

Boulay and Mendel reported seventeen cases of laryngeal paralysis, coming on usually during the period of convalescence; but the authors do not offer sufficient evidence as to the number of cases that might be properly attributed to direct implication of the laryngeal muscles by inflammatory exudation, or to compression of the recurrent nerve by glandular enlargement.

Lublinsky reports six cases of post-typhoid laryngeal paralysis; in one severe case paralysis came on in the fourth week, in the others during defervescence. The abductors were paralyzed in two cases, one recurrent in three cases, and both recurrences in one case. In one paralysis of the recurrent nerve the soft palate was paralyzed also, and in another there was paraplegia and lost reflexes, but no anesthesia.

Another case of special interest was reported by Bernoud, in which stridor and inspiratory dyspnea developed during the third week of typhoid fever. Laryngoscopic examination revealed complete double abductor paralysis, and there was no appearance of laryngitis. The diagnosis of typhoid fever was determined to the exclusion of all other affections, especially diphtheria, and confirmed by Widal's reaction being positive, and by the existence of all the usual symptoms and the occurrence of a typical relapse. In this case, too, paralysis of the soft palate supervened on the laryngeal paralysis.

From personal investigation and a view of the recorded cases, Przedborski concludes that paralysis of the laryngeal muscles in typhoid fever is more frequent than supposed, and this he considers to be capable of proof if the larynx be examined in all cases at different periods of the disease; and he further states that such paralysis is equally frequent during the febrile period, as in the convalescent stage. Moreover, he finds that all the muscles, adductors as well as abductors, are attacked with equal frequency, and that at first only one adductor is attacked, the abductors being later involved, and that paralysis beginning in the dilators of the glottis may disappear and the constrictors then be attacked.

It seems probable that several of this author's cases, especially those observed during the febrile stages of the disease, were myopathic paralyses due to local inflammatory changes. I have examined a large number of cases of enteric fever laryngoscopically, and have not observed frequent occurrence of paralysis in the larynx, while true toxic paralysis is undoubtedly rare.

The same writer describes several cases of laryngeal paralysis in typhus fever, to which the foregoing remarks are also applied, but he considers that the prognosis as regards recovery from the laryngeal paralysis is much less favorable in typhus than in typhoid fever.

Similarly, abductor or recurrent laryngeal paralysis may arise in the course of influenza, and possibly in measles. Of the latter, the only observation that I have been able to trace is the record of three cases by Surgeon-Captain Smith, in which total bilateral recurrent paralysis of the cords set in a few days after the subsistence of the fever, but it only lasted from six to ten days, and, therefore, although it is stated that there was no indication of laryngitis, nor of congestion or inflammation in laryngoscopic examination, I feel some doubt as to these being instances of true neuropathic paralysis. Syphilis has been known to cause laryngeal paralysis, and if we may rightly attribute the central nervous lesions characteristic of *tabes dorsalis* to the remote influence of the syphilitic virus, it must be reckoned about the most prolific cause of neuropathic laryngeal paralysis.

Botey has recorded five cases of apparently neuropathic laryngeal paralysis directly traceable to syphilis, and he considers that syphilis is the most frequent cause of bilateral and especially unilateral recurrent paralysis, going so far as to declare that one ought always to regard a paralysis of one posticus muscle as syphilitic, when other recognized sources of pressure on the recurrent do not appear to exist. Botey further observes that these paralyses are but rarely associated with gross syphilitic lesions in the larynx, and it is worthy of note that the paralysis takes the form of a unilateral or bilateral paralysis of the posticus fibres or of the whole recurrent.

True rheumatic paralysis is rare, if we exclude the cases due to perineuritis induced by exposure to cold, the rheumatic toxin not showing a proclivity for attacking the nervous system like that of diphtheria. I think two of my own cases, however, are perhaps instances of true rheumatic neuritis.

Other cases of rheumatic laryngeal paralysis are recorded by Procter Hutchinson. In one case, at any rate, facial erysipelas has been followed by paralysis of the soft palate and of the posticus muscles (Feith), and a case of posticus paralysis due to gonorrhea is described by Lazarus.

I have recently observed the development of laryngeal paralysis in a case of multiple peripheral neuritis under my colleague, Dr. Shingleton Smith.

Turning now to the inorganic poisons which have been stated to cause laryngeal paralysis, we find that the majority of the recorded cases refer to lead poisoning. Heymann describes three cases of his own; two showed double posticus paresis, and one complete paralysis of both recurrens. Heymann considers that only four of the various cases recorded are clearly attributable to lead—namely, those of Mackenzie and Sajous, and Seifert's first and third cases, all occurring in painters working with white lead. Either posticus or complete paralysis was present in all these cases; except that of Mackenzie, who reports that his case, that of a painter, aged thirty-five years, suffered from complete paralysis of the right crico-arytenoideus lateralis.

Tanquerel des Planches relates that horses working in red lead factories suffer from paralysis of the muscles of the larynx, often necessitating tracheotomy, and Heymann refers to statements in several veterinary works on this subject. Thus, Hurtel d'Arboval relates the same fact concerning horses working in white lead factories; and Ranque also, in reference to the red lead factories at Tours, while the more precise and later observations of Schmidt, Krichels, and Beckmann prove that horses suffer from posticus paralysis due to lead poisoning, and that they are usually otherwise in good health, and able to work again after tracheotomy.

Arsenic has been stated to cause vocal cord paralysis, but I have not been able to trace a reliable instance in point, except one case in which Heymann observed laryngeal paralysis distinctly attributable to arsenic.

Atropine, morphine, copper and phosphorus have been said to cause laryngeal paralysis. Trévelot relates a case of aphonia quickly following a morphine injection. But Günther relates instances of paralysis of the vocal cords in horses, observed by different authors, especially paralysis of the abductors, caused by different kinds of peas, *lathyrus sativus* and *cicer, pisum umbellatum*, etc.

Very interesting and germane to the subject under discussion are the experimental observations of Hooper, of Boston, and of Semon and Horsley, on the apparently peripheral and differential action of ether on the laryngeal muscles, which showed that when various animals were deeply narcotized by ether, stimulation of the peripheral end of the divided (as well as the undivided) recurrent nerve resulted invariably in abduction of the vocal cord, in contradistinction to the adduction which was invariably produced by the similar stimulation of the recurrent in animals not deeply under the influence of anesthetics, or when the recurrent is stimulated in the recently-excised larynx.

These facts point to the selective action of the ether on certain muscles of the larynx, namely, the adductors rather than the abductors, or, to use the words of Semon and Horsley, "we are driven to conclude that ether must act specifically on either the nerve fibres, their endings in the adductor muscles, or on the muscular substance itself." We are all aware of the proclivity of the postici muscles to succumb earlier than the adductors of the vocal cords in all progressive organic lesions of the centers or trunks of the motor laryngeal nerves, but in the case of this toxic substance, ether, owing to the specific selective action, the adductors succumb before the abductors.

We at once realize that the specific selective affinity of a toxic substance may, theoretically at any rate, lead to its pathological action being spent mainly on any particular muscle or group of muscles. There may be some foundation in fact for Morell Mackenzie's dictum that "in cases of toxic poisoning the adductors above are affected, just as in lead poisoning the extensors of the forearm always suffer, the flexors never." As I have mentioned already, Mackenzie himself diagnosed isolated paralysis of one crico-arytenoideus lateralis apparently from lead poisoning.

Yet it is remarkable that in true toxic laryngeal paralysis the postici, with few exceptions, have succumbed either earlier than or concurrently with the adductors of the cords. Without entering into the large questions of the pathological changes in the nervous system resulting from diphtheria, I think the evidence is in favor of the view that the toxin acts on the whole neurone but especially upon the terminal arborisations of the dendron and end plates, and perhaps the early palatal paralysis, like early cardiac failure, is partly determined by the effect of stress. Though very early and possibly the primary alteration in the neurone occurs in the cells of the anterior horns, the most obvious and probably the

earliest changes due to diphtherial poisoning consist in a parenchymatous degeneration of the finer branches of the peripheral nerves, and Gombault found very similar alterations of the peripheral nerves in artificially-induced lead poisoning.

The present state of knowledge hardly warrants definite generalization, but it seems probable that the majority of cases of toxic laryngeal paralyses have their foundations in peripheral neuritis, a view which has been recently expressed by Semon. This would afford an explanation of the varying localization of the paralysis in different territories supplied by the recurrent laryngeal nerve. Thus, excluding the purely myopathic paralyses, toxic paralyses are due to inflammatory generation of the neurone, that is, in its widest sense, neuritis, and may be conveniently divided into two distinct pathogenic groups:

1. Infective neuritis, commonly occurring in the course of diphtheria and less frequently observed in typhoid fever, typhus fever, scarlatina, morbilli, influenza, rheumatism, tuberculosis, syphilis, cholera and malaria.

2. Toxic neuritis, most frequently due to lead poisoning but also reported to have occurred in poisoning by arsenic, copper, antimony, phosphorus, alcohol, atropine and morphine.

We see that laryngeal paralysis of toxic origin has been reported as resulting from much the same poisons and infectious diseases as are known to cause paralysis in other regions. But, notwithstanding the considerable variety of toxins and poisons that have been stated to cause laryngeal paralysis, one must accept with caution many of the cases recorded:

Atropine, morphine and phosphorus have been said to cause laryngeal paralysis.

The treatment of these toxic laryngeal paralyses may be summed up in:

(a) The resort to appropriate general treatment of the infective disease when that is the cause of the paralysis; and measures directed to the removal of the poison in the circulation and tissues in the case of organic or metallic poisons.

(b) Intralaryngeal applications of the faradic or galvanic current, combined with the internal exhibition of strychnine in considerable doses, either by the mouth, or directly into the affected muscles, when feasible.

(c) The relief of dyspnea and threatened asphyxia in cases of bilateral abductor paralysis by intubation or tracheotomy—measures which have frequently been necessary in diphtherial and typhoid laryngeal paralysis.

DR. LODGE described two cases of adductor paralysis of the larynx, due to lead poisoning, which had occurred in his practice. The first case was that of a youth, aged nineteen, who awoke one morning and found himself hoarse. On laryngoscopic examination double adductor palsy was evident. Hysteria was excluded, and there was a blue line on the gums and other evidence of plumbism. Prophylactic and other treatment was adopted. Faradism was applied intralaryngeally. Recovery was complete in about six months. The second case was that of a youth, aged eighteen, who showed bilateral adductor palsy. He had a blue line on the gums, and his mother, who lived with him, also suffered from well-marked lead poisoning. He recovered rapidly in two or three months under general treatment and faradism applied intra-laryngeally.

DR. TILLEY said the introducer had treated the subject so fully as to leave little more to be said. He narrated a case of septic or "hospital" sore throat from his own practice, in which there were no signs of diphtheria, but soon afterwards abductor paralysis of the left cord developed, due, no doubt, to a poison absorbed from the throat, causing peripheral neuritis. Practically it seemed that any poison might produce a peripheral neuritis of the larynx, just as it might do in other parts.

DR. SPICER remarked that the subject was one which stood much in need of elucidation, and he was sure the Section was much indebted to Dr. Watson Williams and the other speakers. His own experience had not enabled him to form a connected view of the subject. He had noticed cases of paresis after tonsillitis, but he could not be sure whether they were due to inflammatory changes or to absorption of toxins. There seems to be a sort of stiffness of the cords, so that both abduction and adduction were defective. He had experienced this in his own person after influenza.

DR. WATSON WILLIAMS remarked that adductor paralysis from lead was very rare, and Dr. Lodge's contribution was all the more valuable on that account. Morell Mackenzie's dictum that the adductors were specially prone to be affected was not true; the abductors were much more frequently affected, and often they alone suffered. This was so also in the case of horses.

Auditory Results of the Removal of Post-Nasal Adenoids—Modified Operation—By DAVID MCKEOWN, M.A., M.D., M.Ch.

The hearing is found within a few days after operation to be improving, and it appears to be taken for granted that the improvement is continuously progressive until the final result is reached, and that the final result is the best.

In regard to the early post-operative period, that is, the interval between the operation and the commencement of the commonly-recognized improvement, Semon and Williams, in the article contributed by them to Allbutt's *System of Medicine*, say: "For the first two or three days, owing to the irritation and inflammation set up by the operation, the nasal obstruction and deafness may be but little improved." This is an inference vitiated by non-observation.

The teaching in regard to the influence of the operation, upon the hearing is incomplete, incomplete at both ends, both as to the immediate and the ultimate result. In a large number of cases the hearing is found immediately after operation to be much improved, indeed, so much so in some instances that the immediate result does not differ greatly from the ultimate. Many of my operations have been performed without anesthetics, and in these cases the testing has been done when the emotional disturbance caused by the operation has subsided, say within half an hour, and I have frequently found similar improvement as soon as the patient left the chair. Where chloroform has been administered the patient has been tested as soon as he has recovered consciousness sufficiently to exercise his attention. This fact—the immediate improvement in the hearing—came under my observation about seven years ago, and few weeks pass without affording me fresh instances.

The testing has been by questions addressed to the patient, and the two distances here given for each ear, refer to the same qualities of voice—low whisper, loud whisper, moderate conversational voice, loud voice.

It will be observed that the differences between the distances before and after operation are so great as to leave a large balance to the credit of the operation after making liberal allowance for discrepancies incident to lack of precision in the method of testing. The immediate improvement is in many if not in all cases followed by some temporary loss due to the irritation consequent upon the operation.

Believers in the commonly-accepted explanation of adenoid deafness may say that immediate improvement is an impossibility; that the suspension of the ventilating function of the Eustachian tubes being the first stage in the causation of the deafness, we should look to its re-establishment as the essential point for the improvement of hearing; that the tubes were functionless either because they were obstructed by catarrh in the naso-pharynx or because there was paresis and interference with the action of the levator palati and salpingo-pharyngeus muscles; that these morbid conditions, with their consequences—depression of the membrane and ossicles—had been in existence for long periods, and that our pathological knowledge teaches us that for recovery from them considerable time is required.

The answer is that a fact is not the less a fact because we cannot explain it; that the question is to be decided by observation alone; that the "time for recovery" argument also applies with much (although not so much) force to the generally admitted improvement taking place within a few days, for no great recovery could be expected within the time from the paresis or catarrhal obstruction; that the want of harmony between the facts and the theory proves that the theory is at the best imperfect, and that, as the case to be mentioned presently shows, the theory covers only part of the ground.

What has been said applies to only one class of case—namely, those in which there is no perforation of the membrane. As regards the case of chronic otorrhea with perforation, I have had reason for thinking that in these also the removal of adenoids is sometimes attended by immediate improvement in hearing, but up till recently the cases which I had tested were open to objection. The procedure followed was to syringe the ear, test, operate and then again test. It might be urged that all results obtained in this way were unreliable, inasmuch as the distance in the first testing was less than it should be, in consequence of disturbance caused by the syringing.

It has for a long time appeared to me that the immediate improvement after operation was causally related to the relief afforded by the operation to the circulatory mechanism. The pathological conditions existing in adenoids would naturally lead to disorder of the local circulation, and this disorder would be removed or mitigated by the operation, which is attended by profuse hemorrhage, and in many cases by great and immediate improvement in hear-

ing. Dench attaches great importance to obstruction of the venous return current from the tympanum and labyrinth, and dwells upon the labyrinthine conditions—irritative and inflammatory—which may result. The difficulties of our subject are not diminished by invoking irritative and inflammatory affections of the labyrinth as a common result. There is ground for believing that there is also a cerebral factor at work.

The final degree of improvement from the operation may not be the best obtained. It was so in some of my patients, and on examining the post-nasal space I found adhesions between the posterior wall of the pharynx and the Eustachian tubes; a rupture of these adhesions led to improvement in the hearing. The morbid condition was re-established several times; the patients dropped out of observation, and there is good reason for thinking that the unfavorable cicatrization would be permanent. In many cases the raw surface left by the operation—and the consequent area of cicatricial tissue—is extensive. The local conditions are also often unfavorable. The degree of projection in the median line, the width of the fossæ of Rosenmüller, and the size and position of the termination of the Eustachian tubes have to be borne in mind. The latter presents great variety as regards size, shape, projection in the post-nasal space, and the size and character of the opening. In some cases the end is large, trumpet-shaped, projecting considerably into the naso-pharynx, and admitting the tip of the finger; in others the lips constitute a prominence in the naso-pharyngeal wall, and the orifice can be felt as a slit, but too narrow to admit of digital separation. These considerations suggest the possibility, if not the probability of a cicatricial impairment. To counteract such an agency is difficult if not impossible.

Two questions arise: (1) Can the influence of cicatrization be lessened by a division of the operation into stages, for example, by limiting the first sitting to the posterior wall and after cicatrization completing the operation? (2) Can a condition of parts more favorable to innocuous cicatrization than that hitherto obtained be secured at a single sitting by a modification of the method of operating? At present complete eradication is the aim of the operation; cutting instruments—forceps, curettes and rings—are generally employed, and the fossæ of Rosenmüller receive special attention. The mucous membrane covering the adenoids is removed by the forceps, and probably also by the curette and rings; hence the surface for cicatrization. Of this surface the parts of most importance are the fossæ of Rosenmüller, because faulty cicatrization here may lead to a permanent im-

pairment of hearing—to a loss, partial or complete, of what had been gained by the operation. If the lymphoid tissue in the fossæ could be enucleated or pressed out, leaving the mucous membrane *in situ*, although ruptured, torn or lacerated, a great advance would be made. The ease with which adenoids may in many cases be broken up and expelled by the finger is well known, and this fact, coupled with the further fact of the difficulty of removing a piece of the mucous membrane by the finger nail, suggests that the fossæ of Rosenmüller should be reserved for digital manipulation, and should be regarded as lying outside the domain of cutting instruments, except where the finger is insufficient. The finger may be used in two ways: (1) To crush; (2) to scrape. Crushing is preferable, and should be tried in every instance, scraping where thought desirable completing the manipulation. I am now in my practice giving effect to these views. A considerable time must elapse before it would be possible to compare the results of the modified operation with those hitherto obtained. It may be said that if the finger prove satisfactory for the fossæ of Rosenmüller, it may be used for the entire operation. Experience and the data as to conformation of the post-nasal space and the softness or toughness of the adenoids afforded by digital examination must be our guides.

It may be urged that the proposed digital manipulation would not be satisfactory, as it would not be likely to lead to what has been regarded as an essential of the operation—namely, the thorough removal of the lymphoid tissue. The chief reason for thoroughness has been the desire to avoid the possibility of a return of the adenoids; but may the fear of this issue not be a groundless one? Presence of lymphoid tissue in the naso-pharynx is the normal condition, and after operation various circumstances are against reproduction: (1) The devascularization of the naso-pharynx and its neighborhood; (2) the establishment of respiration by the physiological channel; (3) the development of the region involved; (4) the antagonistic influences of time on lymphoid structures, and (5) the improved general health following operation.

Impairment of hearing from a reproduction of the adenoids is remediable, but impairment of hearing from faulty cicatrization is practically irremediable. There is no difficulty in choosing.

Statements made by two patients suggest that cicatrization, in addition to impairment of hearing, may lead to other disadvantages: (a) Respiratory troubles not due to naso-pharyngeal obstruction, but probably dependent on involvement of nerves in the cicatrix; (b) tinnitus.

DR. WATSON WILLIAMS. It was difficult to see the reason, but it must be borne in mind that the cases of adenoids in which deafness was most marked often had the least amount of growth. He had never observed any extensive area of cicatricial tissue after the operation, and he should be sorry to return to the finger nail, which he thought could only do superficial crushing, leaving almost the certainty of recurrence.

DR. LOGAN TURNER had examined cases of adenoids within four or five hours of operation and had obtained similar results to Dr. McKeown. He had never noticed in such cases any change in the position of the membrana tympani—lessened retraction—such as might account for the improved hearing. With regard to adhesions, as described by Dr. McKeown, they would tend rather to keep the tube open. The danger would be, he thought, of tearing the tube, which might cause obstruction.

DR. JOBSON HORNE thought the imperfect crushing of diseased adenoid tissue would be much more likely to lead to infection of the middle ear, as the bruised tissue would form a suitable nidus for bacteria. The immediate improvement in hearing was, he thought, mainly due to relief of venous congestion.

DR. PEGLER did not think the bridges and synechiæ so often seen spreading from the upper border of the Eustachian cushion to the roof of the naso-pharynx could be regarded as other than masses of lymphoid tissue. The point had been recently discussed and practically settled by the laryngological society. Personally, on finding this condition after an operation, he concluded that the operation was incomplete. Instances of great and immediate improvement of hearing had occurred to him after adenoid operations.

DR. SCANES SPICER thought the finger nail was very useful for completing an operation. Dr. McKeown's explanation was rather an attractive one and helped to render intelligible the undoubted improvement in hearing obtained by the older operators with the finger nail. The temporary alteration of the circulatory conditions produced by the finger-nail operation would account for a temporary improvement, followed, of course, by relapse after some weeks.

DR. McKEOWN, in reply, said that testing the hearing immediately after operation was quite unobjectionable. He did not advocate a "finger-nail operation," but the finger might well be employed to break up and detach soft adenoids in the fossæ of Rossmüller in order to avoid the risk of harmful cicatrization, which was a much more serious matter than recurrence. Immediate improvement and ultimate impairment of hearing power were determined by observation.

Two Cases of Thrombosis of the Lateral Sinus—By SAMUEL LODGE, JUN., M.D.

In the second of the two cases now recorded the etiology and pathology remained obscure.

Case I.—A schoolboy, aged fourteen, was sent on January 26, 1900, to the Royal Halifax Infirmary for operative treatment.

For fourteen days prior to his admission he had had repeated shivering fits, with high temperatures. On admission, patient complained of severe pain all over right side of the head. Slight purulent discharge from right ear. No pain or tenderness over jugular vein in neck. No facial palsy. Pupillary reflexes normal. No paresis of extraocular muscles. Right optic neuritis. Temperature 101.8° ; the same day he had a rigor and temperature reached 104.4° . Ear syringed with lotio boracis, four-hourly. At 6 a.m. the next day had another rigor. The same afternoon under chloroform, the auricle was detached above and behind and retracted downwards and forwards, and Stacke's modification of tympano-mastoid extenteration was performed: The mastoid cells were carious and contained much foul pus. An erosion in posterior wall of mastoid antrum extended into sigmoid groove of lateral sinus. This was enlarged and pus cleared from groove. The sinus appeared not to be thrombosed, so it was determined to keep the wound lightly packed with gauze so as to be able, to operate on a bloodless field in a day or two if the condition did not improve satisfactorily. Whilst removing the outer wall of the tympanic attic, in spite of the use of a Stacke's protector, owing to a low-lying middle cranial fossa, the dura mater was exposed. There were no signs of extradural abscess.

The boy's temperature after the operation was subnormal. He appeared much better, but complained of pain in the abdomen. On the morning of the 30th he passed a round worm. The temperature, which had gone up the previous evening, became subnormal again. On the 31st he had another rigor, temperature going up to 105° . Temperature normal again at 2 a.m. on February 1st, but three-quarters of an hour later had another rigor, temperature 103.2° . The same afternoon the bony wall of the sigmoid groove to the apex of the mastoid was fully exposed. The sinus was denuded of pulsating granulation tissue with a curette and then appeared as a rigid whitish gray cylinder, presenting much the same consistence as a femoral artery injected with lead for dissection purposes. It did not pulsate, and exploratory aspiration withdrew no blood. An

incision in the long axis about an inch long was made through its wall. The thrombus was very fetid, of the consistence and color of dryish putty. A Volkmann's spoon cleared away the thrombus upwards and had to be passed along the horizontal portion of the lateral sinus well towards the torcular, before the blood current was re-established. The hemorrhage was controlled, as is recommended, by gauze tampon and inversion of edges of sinus. The spoon then cleared the thrombus from below until the current flowed freely. The tamponnade was repeated here, and the wound left to granulate. The temperature next day rose again to 102.2° ; 20 c.cm. of antistreptococcus serum injected. When gauze was removed some pus escaped from above. The neck, beyond enlargement and tenderness of cervical glands, appeared normal. The temperature gradually sank during the next three or four days, but his face became edematous. No edema elsewhere; no albuminuria; no exophthalmos; no chemosis. No paresis of ocular muscles. The facial edema was considered to be of a passive character, due to some interference with the orbito-facial venous communication, probably set up by a non-infective thrombotic extension. The edema disappeared in a day or two. Serum injections were not continued, as the house-surgeon reported the absence of streptococci in a cover-glass preparation. Before the removal of the thrombus the boy was wasting rapidly, afterwards he constantly complained of hunger, and commenced to put on flesh. On February 6th the temperature rose to 105° at 2 p.m. No physical signs discoverable anywhere suggestive of embolic mischief. At 10 p.m. temperature 98.2° . From this period his progress was uneventful.

On April 6th the patient was shown at the Leeds and West Riding Medical Society.

Case II.—On January 5, 1900, J. T., aged fifty-nine, a foreman mechanic, was referred to me by Dr. Strickland. There was no history of discharge from the ears. About six months previously the right ear became deaf, and shooting pains were often felt in it. Gradually the shooting pains came on at shorter intervals, there was also a loud noise in his ear, which kept time with his pulse. For six weeks past the symptoms had been especially bad. The last two or three days his head was swollen on that side, and the previous night, owing to the pain, he had only slept three hours. Up to this time he had kept at work. On examination the right ear was seen to stand off, and there was a non-inflammatory-looking edema roughly limited to the area covered by temporal fascia in front of ear and to posterior border of mastoid process behind. The edema-

tous area felt boggy on pressure, and did not resemble in appearance or consistence any condition set up by the complications of suppurative middle-ear disease with which one was familiar. Right hearing distance—watch not heard. Rinne's test negative. C 4 heard well. Left hearing distance—watch heard at half a metre. The membrane was easily seen. There were no signs of old perforation or important gross changes.

The condition was quite puzzling. The same afternoon Stacke's operation was done. Mastoid area sclerosed; antrum at great depth. No signs of pus in tympanum or its adnexa. On visiting him the next day in the ward one was struck by the apparently complete relief, since the exploratory operation had afforded only negative information. The patient was sitting up in bed, and declared he felt quite well. About the 20th he was allowed to be up. On the 25th he wrote home, saying how well he felt, and that he would be returning home the next day. Shortly after tea (4:30 p. m.) he became rapidly very ill, and was semi-unconscious. Pulse-rate unaltered, no vomiting. At 6 p. m. he had a rigor, temperature 100°; quite unconscious, pupils equal, no deviation of eyes, no retraction of head, no localizing symptoms. At 8 p. m. another rigor, temperature 103.6°. On January 26th condition generally unaltered. 2 a. m. temperature 100.2°. 6 a. m. temperature 103°. 10 a. m. temperature 101°. At 3:30 p. m. further exploratory operation was decided on. The old wound was reopened and extended. The lateral sinus could not be found, there were no signs of extradural abscess; in searching for pus in the temporosphenoidal lobe Macewen's searcher tapped the left lateral ventricle, and a fair amount of clear serum came away; the quantity was not measured. We stitched up dura mater in trephine opening hoping that his intracranial pressure being relieved his condition might perhaps improve, as it had done previously, so as to give time for a definite plan of campaign to be drawn up. Patient gradually grew worse, and died about 10 o'clock on the 27th, with a rectal temperature of 103.6°.

Necropsy Eighteen Hours after Death.—Trephine opening and mastoid region aseptic in appearance; superior longitudinal sinus healthy. On opening dura mater much fluid escaped, not unlike very thin custard in consistence and color. Veins of pia mater greatly engorged; arachnoid and pia felt waterlogged. Brain removed dripping with above fluid. Cerebral sulci full of this yellowish-green lympho-pus. Section of brain: Lateral ventricles full of similar fluid, no sign of abscess, tracks of Macewen's pus

searcher aseptic-looking. Brain felt on its removal like a mass of putty ready for use. On examining the remaining sinuses the right lateral sinus could be traced with difficulty, as its walls were adherent and the bony groove for the sinus was almost obliterated; this condition extended from the torcular to the bulb. From the bulb to its junction with the subclavian the internal jugular was an imperious fibrous cord. The left lateral sinus was of normal size, and the groove in the bone was very well marked, but the sinus was occluded almost to the commencement of the sigmoid portion by *ante mortem* thrombus. The thrombus was sent to the Clinical Research Society for a report. The report stated that "The white clot from the lateral sinus consists of partly discolored fibrin mingled with recent blood clot. The fibrin has contracted into layers, and is undoubtedly *ante mortem* in formation." The remaining sinuses were quite patent; opposite ear normal. There were no signs of old or recent fracture of skull; no extracranial or intracranial tumor; no traces of infection extending from septic wounds or ulcers on head, neck, or mastoid regions. The history excluded a marasmic thrombosis. Permission for a complete necropsy was not obtained.

REMARKS.

Death in this case was presumably due to an extension thrombus forming in the left lateral sinus throwing a greater strain on the collateral intracranial venous circulation than it could bear, on account of the right jugular and lateral sinus being already occluded. As Dr. Hawkins puts it "Upon ligature of the vein (internal jugular) complete stagnation probably occurs in the lateral and petrosal sinuses, but not in the cavernous sinus; sufficient exit is provided by the communication between superior and inferior cerebral veins, between the cavernous sinus and its fellow, between the lateral sinuses across the occipital protuberance, between the torcular, the occipital sinus and the posterior spinal veins, and possibly between the basilar sinus and the anterior spinal veins. No nervous symptoms have been observed to follow."

Two Cases of Chronic Frontal Sinus Empyema Presenting Features of Unusual Interest—By HERBERT TILLEY.

The following cases illustrate some of the difficulties of diagnosis of the obstacles met with in the successful treatment of the disease under consideration:

F. W., female, aged nineteen, left nasal obstruction and severe frontal headaches of twelve months' duration. Examination showed

the left nasal cavity full of large polypi bathed in pus. The post-nasal space was occupied by a large adenoid mass, and hypertrophied faucial tonsils were present. The anterior wall of the left frontal sinus was distended over an area the size of a five-shilling piece. The right nasal cavity was in all respects normal. The polypi, adenoids, and tonsils were removed. Exploration showed the left antrum to be free from pus, while irrigation of the left frontal sinus proved that the pus was present in the cavity in considerable quantity. The anterior half of the left middle turbinal was removed, and the ethmoidal region cleared as far as possible of all pathological products. In the course of a few days the left sinus was freely opened from the outside, and its cavity, which was a very extensive one, was curetted free from all degenerate mucous membrane, a free opening was made into the nose, and the sinus cavity packed with a strip of iodoform gauze two inches wide and three feet ten inches long. It was noted during the operation that a curette could be passed well beyond the middle line towards the right sinus, but, as no pus was ever seen in the right nasal cavity, it was thought that the extension referred to was a diverticulum of the left sinus, and this surmise was strengthened by the sensation of a blind end given to the curette during the operation. The continuance of free suppuration from the left sinus showed, however, that some suppuration focus remained, and a week after the first operation I opened the right sinus only to find it equally diseased as the left had been. Both cavities were packed and irrigated every day for three weeks until they were covered with a healthy mucous membrane, when the external wounds were allowed to close. The patient has completely recovered, and now, two months after the operation, is perfectly free from any nasal discharge.

The case illustrates that although a frontal sinus may contain pus, it does not necessarily demonstrate the fact by a purulent discharge into the corresponding nasal cavity. The explanation in this case being that a pathological opening through the sinus septum allowed the two cavities to communicate and discharge into one nasal cavity only. As it was impossible to explore the right sinus from the nose, a diagnosis of empyema could only be arrived at by an external operation. It would be interesting to know the course of events in this instance. If the left sinus was primarily diseased, are we to ascribe the left ethmoiditis to the irritation of pus flowing constantly from the higher sinus? Since there was no disease in the right ethmoid, but advanced disease in

its corresponding frontal sinus, the view that pus may set up chronic inflammation of the ethmoid, with the associated polypi, seems a probable one.

The second case illustrates a difficulty met with in the successful treatment of chronic frontal sinus suppuration. When all has been done to remove intranasal disease as a preliminary to the external operation, and when in the latter the diseased products have been carefully removed from the sinus, a free passage into nose ensued, and careful aftertreatment carried out, yet, in spite of this, a small quantity of pus sometime continues to flow from the sinus.

E. B., aged thirty, applied for relief from offensive nasal discharge of two years' duration. The frontal sinuses were both found to be diseased and also the left antrum, which was drained by the alveolar method. The external radical operation was performed on the left side, a free passage made into the nose, and a healthy granulating surface covered the walls of the sinus cavity before the external wound was allowed to close. The case did fairly well, but there was always a slight discharge of pus into the nose, and a month after the operation an external fistula formed leading into the sinus. This would close for a few days, then discharge for a similar period, only to close and open again. Three months later I explored the sinus and found the cause of trouble in an extension of suppurating anterior ethmoidal cells outward and between the floor of the sinus and the orbit. These cells communicated with the sinus proper by a small aperture, and thus the cavity was infected, although its greater part was obliterated by cicatricial tissue. By free removal of the partition walls of these outlying ethmoidal cells, they and the overlying frontal sinus were thrown into one cavity, which a week later I epidermized by Thiersch's method. The plan adopted was the same as is carried on in the mastoid operation.

It is at present too early to speak of the result of this last treatment, but as far as can be seen it will be eminently satisfactory, and in future I purpose adopting this method of dealing with frontal sinuses, in the hope that by its means we shall gain as successful and ideal results, with such great saving of time to the patient as we are able to secure in the case of skin grafting for chronic suppuration of the mastoid antrum.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND
OTOLOGICAL SOCIETY.

(Proceedings continued from page 362.)

**A Further Report Upon the Use of Pure Carbolic Acid in the
Treatment of Mastoid Wounds and Chronic Suppuration of
the Middle Ear.**

DR. WENDELL C. PHILLIPS, of New York, presented this report. He said that in his report on this subject last year he had made use of the carbolic acid treatment devised by Dr. Seneca D. Powell for a period of only three months. Of the six cases reported at that time, all had remained well up to the present. The cases during the past year had been of about the same class as those already reported upon, but he had also used the method on cases of burrowing pus sacs. He had used the acid freely in these cases and could not say too much of the favorable results obtained. Better results had been obtained by allowing the carbolic acid to remain in contact with the tissues from thirty to sixty seconds before applying the alcohol as an antidote. In not a single one of the pus sac cases had a secondary operation been required. He never performed an ossiculectomy except in cases which had resisted for a long time the usual methods of treatment. He had seen no ill effect from the carbolic acid treatment in this class of cases and he was inclined to believe a more rapid result had been obtained. It could be applied freely without fear of harm. This treatment had been employed in his service at the Manhattan Eye and Ear Hospital in about twenty cases of mastoid operation. The discharge had been markedly lessened in cases in which other cauterizing agents had failed, and in many instances secondary operation had been avoided. It had been particularly valuable when used in the ear in the form of a spray.

DR. LEDERMAN said that he had used this treatment in a few cases, and had found very little reaction if the alcohol were promptly applied. Where the necrosis was superficial there seemed to be quite a field for the use of this agent.

**An Unusual Case of Traumatic Rupture of the Membrana
Tympani.**

DR. GEORGE L. RICHARDS, of Fall River, Mass. This paper appeared in full in *THE LARYNGOSCOPE*, November, 1900, page 339.

DR. HOLT said he had seen one or two cases of rupture of the membrana tympani from waves striking the head while the person was in bathing. Recently he had seen a case of perforation of the drum membrane occurring in a bicycle rider who had been struck in the ear by a wire hanging down. No other part had been injured.

DR. N. H. PIERCE said that during the bombardment of Santiago a number of sailors had had traumatic perforation of the ear drum, particularly the men working in the turrets. It had been usually accompanied by more or less pain, deafness and tinnitus. Most of these men had been able to return to their work within a week. One of the more protracted cases he had seen recently, and there was a chronic suppurative of the middle ear, which the patient said had not existed before the injury. The treatment had consisted in plugging up the ear with cotton and very carefully abstaining from the use of antiseptics.

A Case of Carcinoma of the Larynx.

DR. THOMAS H. FARRELL, of Utica, N. Y. This paper appeared in full in THE LARYNGOSCOPE, October, 1900, page 250.

DR. LEDERMAN thought that as the man was not suffering much it would be better to leave him as he was, avoiding operative interference for the present.

A Brief Report of a Case of Cerebral Abscess of Otitic Origin.

DR. GEORGE L. RICHARDS presented this report. The patient was a man, twenty-eight years of age, seen first on September 16, 1899. At that time he had had a temperature of 100.4° F., and a perforation of the drumhead. On the next day he was perfectly rational and the general condition seemed good. The day following his temperature being normal and his pulse 76, he was allowed to go home at his own request. He was found late in the evening in a dazed condition in a swamp some distance from his home. He was taken back to the hospital, and on that afternoon the speaker had seen him. He was absolutely unconscious; the pulse was 104; the right pupil was much dilated, and the whole left side was paralyzed. He had made a probable diagnosis of cerebral abscess, advised operation, and given an unfavorable prognosis. Ether was given and the mastoid operation done. Not enough being found to account for the man's condition an opening had been made with the trephine at the base of the right middle lobe of the cerebrum and two or more ounces of very foul pus had been evacuated. The cavity was washed out and drainage tube inserted. Four hours after the operation the pulse was 140, respiration 72 and temper-

ature 105° F. He soon developed a severe bronchitis, which may have been the result either of the ether or the exposure in the swamp. The next day the temperature was controlled by antipyrin, and the man became partially conscious. He died on the third day with a temperature of 107.8° F. No autopsy was permitted. Although nearly the whole of the right middle lobe of the brain had been destroyed it was remarkable that the man had been in such apparently good condition that he had been allowed to go out from the hospital, less than twenty-four hours before being brought back in a state of paralysis and coma.

DR. J. C. LESTER commended Dr. Richards' paper because it dealt with an operative failure. More could be learned from such contributions than from reports of successes.

Cerebral Abscess following Chronic Otitis Media—Recovery.

DR. W. H. DUDLEY, of Easton, Pa. This paper appeared in full in *THE LARYNGOSCOPE*, October, 1900, page 257.

Report of a Case of Granuloma of Prussak's Space Simulating Caries.

DR. NORVAL H. PIERCE, of Chicago, made this report: The patient was a farmer, thirty-five years of age, having no specific history. He came complaining of deafness. There was no apparent discharge, no marked pain and no tinnitus. The watch on the right side could be heard at a distance of three inches, and on the left side at three feet. Lying over the short process of the malleus, on the right side, and to a certain extent obscuring the membrana flacida was a cauliflower-like mass the size of a small pea. He had removed the mass, which protruded through the membrana flacida by a small pedicle. He at once thought the case to be one of necrosis of the incus, but his doubts were aroused by the lack of inflammation of the pars tensa of the tympanic membrane and the meagerness of discharge. A probe detected crepitus, but was arrested before reaching the inner wall of the tympanic cavity. Before doing an ossiculectomy he scraped out the tissue through the opening already existing. In the tissue removed he detected gritty particles which, under the microscope, were found to be organic, and soluble in hydrochloric acid. After the scraping he found that he had to deal with Prussak's space. The cavity was packed with a little gauze, and the patient made a good recovery. The membrana flacida did not reform over Prussak's space, leaving the cavity exposed to external inspection. The speaker said this was the only case of this peculiar character that he had been able to find recorded. We must

always differentiate this condition from true osseous necrosis before ossiculectomy, the two conditions having many points in common.

DR. C. W. RICHARDSON said that the interesting feature was the calcareous deposit. It was probably the result of irritation from retention of secretion, caused by the presence of the granuloma. Calcareous deposits occurred with exceptional frequency.

DR. PIERCE replied that this was a rather common condition in tympanic membrane, though the case was not well understood. The case was important because it showed the necessity of differentiating this pathological condition when occurring within a granuloma from the necrosis of the ossicles before operating.

Two Operative Cases of Lateral Sinus Disease of Otitic Origin with Jugular Ligation.

DR. OTTO JOACHIM, of New Orleans, read this paper. The first patient was a white male, twenty-four years of age, who had been admitted to hospital on October 10th. Both ears had given more or less trouble since childhood. The present illness had begun with pain in the head, especially on the right side, malaise, fever and a chill. He was extremely restless, and answered questions slowly and talked at random. There was tenderness over the antrum and a purulent discharge from the ear on the right side. The diagnosis was pyemia of otitic origin. The operation was done on October 12th, and the lateral sinus was laid bare freely. The internal jugular was ligated before division. Both the vein and the sinus were found to be purulent. The operation was very extensive, but the patient survived the immediate shock. The temperature continued between 101° and 104°F., reaching 106° on the third day, while the pulse was between 88 and 100. The wounds were opened on the third day, and the lower one was found distended with pus. Cleansing the parts did not control pyemia. On the sixth day a thorough search was made for the pyemic focus, but without success, and the man died on October 24th. At the autopsy numerous metastatic abscesses were found in the lungs, and the right lung showed a pneumonic process. The right lateral sinus was found thrombosed, and a few drops of pus were discovered in the sigmoid sinus. There were extensive pockets of pus in the deeper layers of the neck.

The second patient was a white youth of nineteen years, who had had trouble with the right ear since 1889, marked by ear ache and periodical discharges of pus. The present illness had begun with fever and swelling behind the ear four days previously, and he had had a chill two days before coming under observation. The temperature was 102°F. and the pulse 120. There was no special tender-

ness of the mastoid, and the external auditory canal contained but little serous discharge, and having no particular odor. Shortly after admission the boy had had a severe chill and the temperature had risen to 104°F. The next day the temperature was 102° and swelling seemed to be somewhat larger. He was operated upon at this time in the usual way. The sigmoid sinus was exposed and opened throughout its entire length, and a solid coagulum removed. The internal jugular was irrigated. On the fifth day the dressings were changed for the first time. The general condition of the patient was satisfactory. The upper wound was dry but had a peculiar odor. The speaker said that statistics showed a greater preponderance of recoveries in cases in which the jugular had been ligated. It was worthy of note that complete facial paralysis occurred in spite of precautions to prevent it.

DISCUSSION.

DR. RICHARDSON said that these reports were not only interesting but instructive as affording the necessary data for making an early diagnosis. The danger in these cases was not so much from the formation of a thrombus in the sigmoid sinus as from the thrombus lying there day after day until pyemia develops. When there were fever and chill the harm had been done, yet unfortunately this was often the first positive evidence of the existence of a septic thrombosis. He had had under his observation a case from the very start, yet the septic thrombus had formed without any symptoms showing before the chill. The day before this symptom had appeared the patient had had an almost normal temperature, and had seemed to be better than before. The statement has been made that the occurrence of an elevation of temperature after the subsidence of the other symptoms, and in the absence of retention of pus, should lead one to suspect septic thrombosis. In his opinion, ligation of the internal jugular was the course to pursue in all of these cases. It did not add to the gravity of the case, and prevented the septic infection becoming more general.

DR. N. H. PIERCE said that his experience had led him to believe that the most important symptoms in sinus thrombosis were chill and sudden rise of temperature, or sudden fluctuations of temperature. However, within the past month, an otitis media had developed in a young girl after the grip, and just as she was recovering from this an exposure to cold had caused a return of pain in the ear and a muco-serous discharge from the ear. After a few days she had had a series of slight chills, and the temperature suddenly arose to

within from 100° to 105°F. Two other consultants had agreed with him in the diagnosis of septic thrombosis. The next morning the temperature had fallen to 103°, and from purely friendly and sentimental reasons he had postponed operation. In another day she had developed the usual evidences of erysipelas about the ear, which explained the chills and temperature, and had made a satisfactory recovery.

DR. N. L. WILSON said that he had seen last winter a case in which pyemia of the joints, the heart, the lungs and the brain had been present, and yet the patient had recovered. The case had been under the care of Dr. Toeplitz.

DR. JOACHIM said that undoubtedly a continued high temperature in these cases was very suspicious of infection of some of the sinuses, and yet it did not apply to children, for, in them there might be a very high temperature without any sinus thrombosis. In the adult the tendency to fever was not great. Of the metastatic affections the most favorable were those affecting the joints and the muscles. In some cases recovery had taken place without tying the jugular vein though the lungs had shown metastases. It was, however, the part of prudence to tie the jugular.

A Palate Retractor.

DR. JOSEPH A. WHITE, of Richmond, Va., exhibited his palate retractor, and explained the proper method of using it. He had never seen a case from six years of age up on which he could not use the instrument. He also exhibited a convenient handle that he had devised for use with the cold snare, the hot snare and for various other purposes. He likewise exhibited his electric saw, a direct acting instrument which would not stop even though pressure were made. An improved scissors and a half retaining tongue depressor were also shown.

A Peculiar Enlargement of the Turbinals.

DR. C. P. LINHART, of Columbus, Ohio, reported this case. The patient was a man of forty-five years having a large tumor involving the anterior turbinate and completely occluding the nostril. Two other surgeons had seen the growth and had made a diagnosis of sarcoma. Dr. A. B. Duel, of New York, had doubted the diagnosis, and had submitted a large section of the growth to Dr. Jonathan Wright, who reported the growth to be a granuloma. Dr. Duel had then removed the whole of the inferior and part of the middle turbinate, and had sent the man back to Dr. Linhart. The wound had not healed well. There was no history of syphilis,

but potassium of iodide was given in increasing doses, and under this treatment the improvement had been most rapid, so that within three weeks the nasal trouble had practically disappeared. At present the case was practically well.

A Brief Report of a Case of Tic-Douloureux.

DR. F. H. KOYLE, of Hornellsville, N. Y. This paper appeared in full in *THE LARYNGOSCOPE*, October, 1900, page 253.

DR. LESTER asked what was the condition of the pupils, and also in giving the exercise, was attention paid to the heterophoria.

DR. KOYLE replied that both pupils were apparently normal. In the exercises he had given attention first to the hyperphoria.

Glandular Complications of Acute Follicular and Acute Suppurative Tonsillitis when Accompanied with Grip.

DR. WENDELL C. PHILLIPS, of New York, read this paper in abstract. He said that during the past spring follicular and tonsillar affections were specially frequent at the time of the prevalence of the grip. In his own cases the deeper glandular structures had been involved, and the inflammation had been very severe. All of the cases had had the grip, and nearly all had previously had follicular tonsillitis. The history was usually that of the grip with follicular tonsillitis, pain in the neck, extensive swelling and rise of temperature. About one-half of the cases had suppurated, and had required operation. In two cases it had been necessary to dissect out the entire gland. Adults seemed to be more frequently affected than children, but age and sex had exerted no influence on the result. Examination of the pus in one case showed numerous long streptococci. No doubt the infection had reached the glands through the lymphatics.

DISCUSSION.

DR. N. L. WILSON said that he had seen several such cases, not only involving the glands, but the sinuses. They had been especially prevalent this winter following the grip.

DR. R. C. MYLES said that this also had been his experience. Apparently it was the result of the attenuated poison of the grip. For some reason this special infection had seemed to penetrate very quickly into the deep lymphatics.

DR. C. W. RICHARDSON said that he had seen only one case of this kind during the past winter, although he had seen an unusually large number of cases of follicular tonsillitis. The infection in Washington had been milder than in previous years.

DR. PRICE-BROWN had met with more throat trouble in Toronto the past winter in connection with the grip than usual but cases of suppuration had been no more frequent, although glandular enlargement had been very common.

DR. JOACHIM said that in his part of the country tonsillitis had been much more prevalent during the past winter than usual, yet he had not met with any unusual degree of involvement of the deep cervical lymphatic glands. However, other complications, such as acute otitis media, had been remarkably prevalent.

DR. W. H. DALY asked if there had been any deposit on the tonsils, either fibrinous or diphtheritic.

DR. PHILLIPS replied in the negative.

DR. W. H. DALY said that the cases that he had seen had been complicated rather with rheumatic conditions. Generous doses of the compound liquor of iodine, both internally and locally, had given him the best results. The underlying condition seemed to him rather rheumatic than the grip. The grip was credited with doing more harm than was really the case.

DR. J. A. STUCKY, of Louisville, Ky., said that there had been an epidemic of this follicular trouble in Kentucky. He had not been able to ascribe it to the grip. Anti-rheumatic remedies had given good results.

DR. S. MACCUEN SMITH, of Philadelphia, said that there had seemed to be a rheumatic element in most of the cases that he had seen, and in addition to the follicular condition, there had been some extension to the larynx. His cases had done best under anti-rheumatic treatment.

DR. L. C. CLINE said that he had observed an unusual number of cases of follicular affection in his part of the country, and an unusual proportion of them had suppurated. Many of his patients had improved promptly under the use of sodium salicylate together with local treatment with guaiacol in full strength.

DR. JOSEPH S. GIBB said that he had seen a number of cases of tonsillitis of the follicular form in Philadelphia, but none in which the deep glands had been involved. He had also seen a number of cases in which the sinuses had been involved.

DR. PHILLIPS, in closing, said that his treatment had consisted in an initial dose of calomel, followed by salol or bicarbonate of soda with enough phenacetin to control the pain.

THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Summary of Proceedings—Sessions of August 4, 1900.

(Proceedings continued from page 369.)

The Indications for Thyrotomy—SIR FELIX SEMON (London).

Thyrotomy is an operation uncommonly performed, but until lately but slightly esteemed. Of late it has been more generally utilized on account of improvement of technique, decreased danger and better results.

Special Indications.—In most cases alternative operations may be performed, such as intralaryngeal operations, dilatation, intubation, etc.:

1. Foreign bodies in the larynx should never be permitted to remain enclosed in the larynx for a long time.
2. Wounds of the larynx. Fractures, gun-shot wounds, suicide wounds.
3. Laryngocele. Indications rare.
4. Stenosis of the larynx. Sometimes (for example in syphilitic fibroid thickening of the mucous membrane) thyrotomy followed by excision of the tumefied portions gives good results. However, it is impossible to guarantee the result. Possibility of a return of the stenosis.
5. Acute perichondritis of the cartilages of the larynx. Indication rare, but result sometimes excellent.
6. Tuberculosis and lupus of the larynx. Goris has laid down the indications. Result is sometimes satisfactory, but there is often danger of tuberculous infection of the surgical wound.
7. Scleroma of the larynx. Thyrotomy is apparently the best method, but it does not give a certain protection against recurrence.
8. Benign neoplasms of the larynx. The intralaryngeal method is without doubt preferable when it can be employed, but there are some exceptions to this rule. Discussion of this eventually. Necessity of individualizing each case. Thyrotomy does not offer a guarantee against recurrence of multiple papilloma.

9. Malignant neoplasms of the larynx. The removal of these neoplasms at the beginning and when they are strictly limited to the interior of the larynx (intrinsic cancer and sarcoma) is at present the most important indication for thyrotomy. Danger of erroneous statistics. Discussion on the relative value of the intralaryngeal method and extirpation of the larynx as compared with thyrotomy. Great value of the latter when the diagnosis has been made in time and when the cases are judiciously chosen for operation.

Technique of Thyrotomy—E. SCHMIEGELOW (Copenhagen).

The operation, which ought to be preceded by tracheotomy, should be performed under deep anesthesia.

The tracheal canula should be made in such a manner that aspiration of blood during the operation is prevented. Hahn's canula is the best. After opening the larynx by incision of the thyroid cartilage, it is necessary to tampon the inferior portion of the pharynx with a sponge, thereby preventing the saliva from falling into the larynx. A solution of cocaine may be used to reduce the sensibility of the mucous membrane of the larynx.

When the operation is completed and the hemorrhage arrested, the interior of the larynx is powdered with iodoform. The wound is entirely covered with cotton and iodoform gauze, which is changed several times a day. The patient should be put to bed in as horizontal a position as possible, and after five or six days healing will be sufficiently advanced to permit the patient to leave his bed.

The Immediate and Remote Results of Thyrotomy—GORIS (Brussels).

In order to review results that are comparable, a circular letter was addressed to specialists in which they were asked to signify the various diagnoses, the age, sex, the exact seat of the disease, the disease, the general state of the patient at the time of operation, the procedure employed, and, finally, the immediate and later results of intervention. A resumé of the information received shows the following:

Sixty-two for malignant tumors of the larynx; 14 for tuberculosis; 25 for benign tumors; 2 for stenosis; 1 for foreign body; 1 for rhinoscleroma.

Four of the 105 cases succumbed to pneumonia within a week after the operation. Thyrotomy, therefore, belongs to the category of benign operations, as the death-rate is less than 4 per cent.

Thyrotomy for Malignant Growths.—1. Sex. Malignant tumors affect males more frequent than females. Of the 62 cases 55 were males; 3 females, and in 4 the sex was not reported.

2. Age. Below 30 years, 0; 30 to 40, 4; 40 to 50, 14; 50 to 60, 20; 60 to 70, 18; 70 to 75, 4; not stated, 2.

3. Voice. The results in this regard vary, depending upon the extent of the operation. In the main, removal of one vocal cord permits the utterance of some sound. In some cases, the voice continues excellent after removal of cord, on account of the formation of a cicatricial band.

4. Remote results. Sarcoma has been included with carcinoma, although the tumors have a different malignancy, for the number of sarcomata is too small to influence the statistics. From the 62 cases it will be necessary to subtract 7 in which extirpation of the larynx was performed. The writer includes in his statistics the cases in which at the time of the performance of the thyrotomy, a portion of cartilage was removed. In these cases the thyrotomy remains the important intervention, and the resection the accessory operation. Finally, the statistics include some cases in which the operation has been too recently performed to ascertain the value of thyrotomy (4 of Chiari and 2 of Moure). There remain then 49 cases, giving the following results:

Surviving more than 10 years, 1 (Boeckel); from 5 to 8 years, 8; from 2 to 5 years, 14; total, 23.

Or a percentage of 46.9, which may be considered as cures, there were seven cases in which no recurrence took place within a year.

Thyrotomies for Tuberculosis.—These results are less brilliant. Only three cases out of fourteen can be considered as cures. In the other cases the operation induced a more rapid development of the disease.

Thyrotomies for Benign Tumors and Stenosis.—The results from the standpoint of voice are variable, but in general they are good. Diffuse papilloma is the condition which most frequently called for the operation; while recurrence was not entirely prevented, it is the operation of choice. In two cases of stenosis of the larynx, one was cured; in the other, normal respiration through the larynx could not be obtained.

In one case of rhinoscleroma, extending to the larynx, Chiari obtained complete cure by excising the subglottic tumefaction.

Indications for Operation in Cancer of the Larynx—A. GOUGENHEIM (Paris) and E. LOMBARD (Paris).

Owing to the many clinical aspects of cancer of the larynx, no fixed rules of treatment can be made. Not only the age and condition of the patient, but also the character, size and location of the growth must be considered.

New methods of operation have been suggested and encouraging statistics published, but no consensus of opinion has yet been reached.

Three classes of malignant neoplasms of the larynx may be named: (1) inoperable; (2) operable; (3) cases in which the rapid growth of the neoplasm made interference impractical, or where serious organic lesions complicated the local conditions. The patient's power of resistance must also be considered.

Patients affected with serious organic lesions, as diabetes, albuminuria, and especially cardiac or pulmonary lesions, should be classified as inoperable cases. To this class should also be added cases with considerable secondary involvement of glands. In these cases tracheotomy is indicated.

For operable carcinoma of the larynx, four methods of operation were to be considered: (1) endo-laryngeal operations; (2) tracheotomy; (3) laryngo-fissure; (4) laryngectomy.

There are three conditions favoring endo-laryngeal operations: (1) Certain varieties of cancer of the larynx, showing no tendency to spread. (2) This limitation in area of the growth is observed mainly in old people, and in advanced age such extensive operative interference may not be deemed advisable. (3) The variety of pedunculated epithelioma occurring in the larynx, demanding quick removal to prevent suffocation.

In the author's opinion the main usefulness of endo-laryngeal operation was for diagnostic purposes only, for to completely extirpate even the smallest malignant neoplasm the endo-laryngeal method was impractical.

Tracheotomy was the last resort in inoperable cases. Tracheotomy appeared to produce a restful effect in cases of laryngeal cancer and tended to retard the growth. In operable neoplasms, however, thyrotomy or laryngotomy were demanded.

It is urged that every laryngeal neoplasm, no matter how benign it might appear, should be carefully studied. When a diagnosis of carcinoma is made the method of operation should be selected according to the conditions of the case.

At present thyrotomy and partial laryngectomy were the most successful operations. Simple thyrotomy (laryngo-fissure) with removal of the soft parts has a limit range of application; partial laryngectomy was useful in a larger class of cases. Laryngo-fissure was adapted to neoplasms of limited area which had not spread to the arytenoid regions, anterior commissure, sub-glottic area or trachea. As a laryngoscopic examination offers but meagre data as to the area of a growth, laryngo-fissure was frequently an exploratory operation or the early stage of more extensive procedures.

Where a malignant tumor invaded an entire vocal cord or ventricular band, or had perhaps invaded the opposite cord or had spread to the sub-glottic area, or to the posterior wall of the larynx, involving the underlying tissues, the most free operation possible was indicated. Owing to the high death rate in total laryngectomy, however, partial laryngectomy is more often selected. The best results were obtained when the epiglottis, posterior wall of the larynx and the greater portion of the cricoid cartilage were left intact.

The importance of early diagnosis and early procedure was urged.

Palliative Treatment of Cancer of the Trachea and Larynx—The Use of the Rubber Catheter as Tracheal Canula—A. COURTADE.

The author reports the case of a man, æt. forty, general health good, voice subjected to constant strain; had an attack of bronchitis with aphonia, followed by a copious hemoptysis.

Tubercular laryngitis was diagnosed and the patient sent to Algiers, then to Eaux Bonnes and was compelled to leave a week later on account of suffocation. Condition of suffocation became aggravated and tracheotomy was performed. The operation only gave partial relief because no canula quite opened the air passages. Laryngoscopic examination revealed the presence of cancer of the trachea, extending up to the larynx. This explained the unsatisfactory working of the canula.

The patient was compelled to pass a rubber tube through the metal canula. This relieved him of all dyspnea. Soon afterwards the metal canula was discarded and only the rubber tube used. The patient carried this rubber tube for six months.

The palliative treatment of laryngeal cancer consisted of: (1) The introduction of suitable canula to produce easy respiration. (2) Check the hemorrhage by the use of perchloride of iron or peroxide of hydrogen. (3) Diminish the quantity and odor of the secretion by instillation of mentholated oil. Eucalyptus or tracheal sprays, the solutions of zinc chloride. (4) Prevention of granulation by swabbing with pyoktanin.

Modern Surgery of the Larynx—GLÜCK (Berlin).

The author describes his own methods of performing and technique of the major operations on the larynx:

1. Operation for stenosis and extensive cicatricial adhesions. This consisted of transverse resection and extirpations of all pathological tissues to clear the anterior esophageal wall. The sutures of the two openings in the trachea and larynx are then carefully approximated. The results obtained were excellent.
2. Technique of thyrectomy and total laryngectomy.
3. Operations for loss of tissue due to necrosis and exfoliation of the cartilages of the trachea. These were plastic operations with blank flaps with true transplantation.
4. Operations for diffuse malignant tumors of the larynx or its adnexa. Prognosis up to the present time was doubtful; most of the patients died of septic broncho-pneumonia due to inhalation of foreign bodies.

To prevent this complication the author had, in 1880 presented the thesis, "*In extirpation of the larynx, or more generally speaking, in all operations where death results from aspiration pneumonia, prophylactic resection of the trachea absolutely prevents the formation of broncho-pneumonic foci.*" This was now accepted by all surgeons.

The main idea of all modern prophylactic measures are to interpose between the operative area of the deeper respiratory passage a living barrier which should entirely prevent any aspiration of foreign bodies into the air passages.

Different phonetic types were produced in accordance with the size of the piece removed from the larynx. The author directed special attention to his phonetic apparatus.

For cases in which the trachea was entirely cut off from the nasopharynx, he had constructed a very simple and effective apparatus.

Tone was produced in this instrument by the air current during expiratory breathing, and was conducted to the speech apparatus by means of an India rubber tube. Thus, instead of an indistinct whisper the voice was loud and clear. This instrument was of great value, for by its use even aphonic persons wearing the tracheotomy tube could be restored.

(To be continued.)

THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

SECTION OF OTOLOGY.

Summary of Proceedings—Sessions of August 6, 1900.

(Proceedings continued from page 374.)

PROF. POLITZER presided.

Lupus of the Face and Especially of the Auricle.

LANG (Vienna) presented a number of patients operated for.

Observations on Dry Otitis—M. MIOT (Paris).

An operation should never be attempted in cases of panotitis; on the contrary, if there be synechias, an operation is apt to be favorable to the patient.

Deafness due to the muscular insufficiency of the muscles of the middle ear and Eustachian tube may be justifiably operated with benefit. The author enumerates and describes accurately the symptoms of this sort of disease. It is important, as a matter of fact, that an absolute diagnosis be made. When, in a patient affected with this form of otitis, the worse ear alone is operated upon, an increase in auditory acuity is noted not only on the operated side, but also in the other ear, especially by submitting it to faradisation and, better yet, to galvanization.

The best path for operating seems to M. Miot to be the external auditory meatus, except in those patients who have a small canal. The middle ear is left in place or it is removed together with the two large ossicles. To arrive to the place where the trouble is located the author prefers a large incision in the outer bony wall of the attic.

Results Obtained in Sixty Cases of Chronic Dry Otitis Media by Petro-Mastoid Curetting—A. MALHERBE (Paris).

In forty-one cases in which there was sclerosis secondary to catarrhal tubo-tympanitis or to suppuration of the ear, the results were always good.

The ten other cases of primary sclerosis gave varying results according to the amount of involvement of the labyrinth. They were very good in two, good in six, fair in six and bad in five.

The author recalls the contra-indications to operative measures which he has already given and which are furnished by the study of cranial conductivity.

Five of the patients were operated successively on both ears, and the results were as satisfactory on one side as on the other.

The post-operative improvement of the hearing increases for a certain length of time, and then it appears to remain pretty stationary.

The author classifies chronic inflammation of the middle ear as: 1° hypertrophic interstitial tubo-tympanitis; 2° atrophic sclerous antro-tympanitis. There are also tubo-tympanitis of nasal origin and others of pharyngeal origin; there are even mixed forms.

Finally, in the class of primary scleroses, there exists, besides scleromatous tympanitis *d'emblée*, a congenital form of precocious and rapid sclerosis which is especially observed in females, the precocious adhesive tympanitis.

Surgical Treatment of Aural Sclerosis—SIEBENMANN (Bâle).

The author answers the question as to whether the aural sclerosis can be treated surgically, in the light of our present knowledge, in the negative. Aurists are practically agreed that results are achieved only in conditions of hypertrophic catarrh, and those that are sequel to old suppurations, and that these results are by no means certain in these. The paper discusses elaborately the pathologic changes of the affection as contraindicated of operative procedure.

Surgical Treatment of Aural Sclerosis—RICHARD BOTEY (Barcelona).

Surgical treatment rarely does any good; it is permissible when the watch is heard by bone conduction, when Rinné is negative on the diseased side, and when hearing power is increased by perforation of the membrane. The author's experiments upon animals demonstrated the uselessness of the operation for in spite of care the region of the fenestra ovalis was disturbed, and the plate of the stapes became ossified and united to the fenestra ovalis.

Aural sclerosis being a tropho-neurosis with the formation of new connective tissue, chiefly in the labyrinthine capsule, around the fenestra ovalis, and in the cochlear canal, and the acoustic nerve being affected, it is certain that surgical treatment is of no use or of futility in nearly all cases.

(To be continued.)

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The Use of Suprarenal Extract in Diseases of the Nose and Throat. SEYMOUR OPPENHEIMER (New York). *Charlotte Medical Journal*, October, 1900.

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- A Tracheal Canula which has Proved Valuable.** R. GERSUNY. *Wiener Klin. Wochenschr.*, June 28, 1900.
- A Convenient Sterilizer for Instruments Used in Minor Surgery, Especially for Laryngeal, Ear and Nose Instruments.** HECHT. *Münch. Med. Wochenschr.*, September 4, 1900.
- Report on Some New Nasal Instruments.** JAENICKE. *Deutsch. Med. Wochenschr.*, June 21, 1900.

X. MISCELLANEOUS.

- Varieties and Anomalies of the Vallecule and the Sinus Pyriformes.** ALBERT ROSENBERG (Berlin). *Archiv für Laryngol.*, Vol. x, No. 3.
- Scleroma, particularly in East Prussia.** P. H. GERBER (Königsberg). *Archiv für Laryngol.*, Vol. x, No. 3.
- Scleroma, based on the Study of 100 Cases.** ALEXANDER BAUROWICZ (Krakau). *Archiv für Laryngol.*, Vol. x, No. 3.
- On a Group of Clinically and Etiologically Related Diseases of the Upper Air Tract.** E. NEISSER. *Deuts. h. Med. Wochenschr.*, August 16, 1900.
- Four Years of Oto-Rhino Laryngological Practice.** P. L. PELAEV. *Gac. Med. de Granada*, 1900, xviii, 433-440.
- Report of Eye and Ear Clinic of Royal Victoria Hospital.** F. BULLER and GORDON BYERS. *Montreal Medical Journal*, October, 1900.
- Quarterly Retrospect Diseases of the Throat and Nose.** GEORGE T. ROSS. *Canada Medical Record*, August, 1900.
- *The Present State of Our Knowledge of Asthma.** W. A. WELLS (Washington). *N. Y. Med. Journ.*, Oct. 13, 1900, and Oct. 20, 1900.
- *On the Employment of the Upright Position in Ether Operations upon the Nose, Throat and Ear.** THOMAS R. FRENCH (Brooklyn). *New York Med. Journal*, Oct. 13, 1900.
- A Case of Endothelioma Myxomatodes.** H. CORDS (Berlin). *Deutsch. Med. Wochenschr.*, Aug. 30, 1900.
- The Operative Treatment of Fractures of the Clavicle and of the Nasal Bones.** KONRAD BUDINGER. *Wiener Klin. Wochenschr.*, June 28, 1900.
- Two Case of Congenital Complete Cervical Fistula.** JACOB GUGENHEIM (Nürnberg). *Archiv für Laryngol.*, Vol. x, No. 2.
- Suggestions for the Care of the Nose.** E. R. RUSSELL (Charlotte, N. C.). *Charlotte Medical Journal*, October, 1900.
- How Shall We Manage Our Cases of Membranous Croup?** WILBUR N. HUNT. *West. Med. Rev.*, September 15, 1900.
- The Naso-Pharynx in Relation to Aural Disease.** A. D. MCCONACHIE. *Med. Mirror*, September, 1900.
- *On the Ring of Waldeyer Considered as a Road of Entry for Microbial Affections.** PIRERA. *Archiv. Italiani di Laryngol.*, April, 1900.

SELECTED ABSTRACTS.

Edited by

FAYETTE C. EWING, M.D., St. Louis,
with the collaboration of the
EDITORIAL STAFF.

Sarcoma of the Nasal Mucous Membrane, Etc.—A. T. BRISTOW (Brooklyn)—*Brooklyn Med. Journ.*, October, 1900.

The patient at the examination presented a large tumor of the anterior naris; it filled the entire nasal space on the left side and the nostril was much bulged outward. Frequent bleeding occurred on slightest touch.

Under ether in Rosc's position, the naris was thoroughly curetted; furious bleeding. The naris was packed with iodoform gauze, which controlled the bleeding. Later a secondary curettement of the septum was done, and the bleeding was checked with gauze saturated with extract of suprarenal gland.

The pathological report showed the growth to be a melanotic sarcoma, though no return has been seen to date.

(There was a difference in the opinions of the gentlemen who examined specimens of the growth microscopically.)

M. D. LEDERMAN.

Laryngectomy and Excision of Part of the Trachea—A. T. BRISTOW (Brooklyn)—*Brooklyn Med. Journ.*, Oct., 1900.

A patient upon whom this operation was performed for cylindrical carcinoma, seventeen days before the meeting. The growth seemed endolaryngeal and the adjacent regions of the neck did not show any glandular enlargement. Preliminary asepsis was carried out; the teeth being cleansed and the fauces and naris frequently sprayed with an antiseptic solution. The operation was performed under nitrous oxide anesthesia, which the reporter believed much safer than ether or chloroform, and it did not cause such irritation of the bronchial membrane. It furthermore prevented vomiting, which was an important advantage when the pharyngeal sutures were considered. The Keen technique was employed. The tracheotomy was performed ten days before the extirpation of the larynx and tracheal tissue.

As soon as the larynx was clear from the other tissues the patient was placed in the Trendelenburg position and the trachea was cut through close to the tracheotomy wound. This position prevented the blood running into the trachea and rendered unnecessary the use of any canulæ. The operation is described in detail with notes of the laryngeal condition by Dr. T. R. French, supplemented by illustrations.

M. D. LEDERMAN.

The Production of Local Anesthesia in the Ear—ALBERT A. GRAY

—*Lancet*, April 21, 1900.

In acute inflammation of the middle ear, no local anesthetic has as yet been found which is at all satisfactory; and the pain, which is often severe in this affection, has frequently to be relieved by incision either under a general anesthetic or, if without it, by subjecting the patient to indescribable agony, though it be only of short duration.

With a view to finding some vehicle which would dissolve cocaine (or eucaine, as suggested by Horne and Yearsley), and at the same time penetrate the tissues rapidly without destroying them, the author tried various solvents. The first which suggested itself was alcohol in the form of rectified spirits; but this was absorbed too rapidly, and, moreover, it caused in some cases rather severe burning pain before the cocaine took effect. Various combinations of the volatile oils with rectified spirits were next tried, but as these solutions were only to a slight extent miscible with water they proved unsatisfactory. Finally, he tried a mixture of anilin oil and rectified spirits, and this met the requirements of the case admirably. It penetrates rapidly, is miscible to a considerable extent with water, and does not destroy the tissues. For experimental purposes the following solution was used: 5 parts of cocaine hydrochlorate, 50 parts of dilute alcohol, and 50 parts of anilin oil. This gives a strength of a little less than five per cent of cocaine.

In conclusion, it may be well to indicate shortly the theoretical considerations which led to the results described above. This is important, because if they are kept in mind the surgeon may be able by various artifices, which a little imagination and a knowledge of elementary physical laws will suggest, to obtain the result he desires when a blind rule-of-thumb method of procedure has not been able to bring about this result.

To effect penetration through the outer layers of the tympanic membrane dehydrating agents are the most suitable. By abstracting the water from the tissues, the latter contract and the fluid passes through the interstices produced by this contraction into the deeper layers until it reaches the nerve-terminations in the innermost layer. Both alcohol and anilin oil are agents of this description; and for general purposes a solution composed as follows is best suited for the production of anesthesia: 5 or 10 parts of cocaine hydrochlorate, 50 parts of dilute alcohol and 50 parts of anilin oil. This solution is equally suitable for operations on the tympanic membrane, on granulations, or for the removal of ossicles. In the few cases in which we desire to operate upon a dense thickened membrane, the penetrating power of the solvent must be increased. This is best done by using absolute alcohol in place of rectified spirit and increasing the proportion of anilin oil, as shown in the formula above.

Further, the laws of osmosis must be kept in mind. Therefore, in order to effect penetration, a large proportion of the solution should be used. If this be not done, osmotic equilibrium is soon established and penetration will cease. In practice, the author

always fills the external meatus with the fluid, and has never seen any serious effects of cocaine poisoning by so doing. The worst that has occurred has been a trifling giddiness, that passed off in the course of not more than five minutes. Nausea was noted in one case, but it did not occur until more than two hours after the patient had left the dispensary, and as she was subject to such attacks, it is very doubtful if the cocaine was to blame. Palpitation has not occurred in any of the cases.

The rendering of the membrane transparent depends, of course, upon the laws governing the refraction and reflection of light. In ordinary circumstances the indices of refraction of the various constituents of the membranes are of very different magnitudes, and as these different constituents are in close juxtaposition, there is great reflection and dispersion of the light. By infiltrating the tissues with the anilin oil, they all come to possess the same index of refraction, or approximately so, and light penetrates the membrane much more easily. To effect this purpose, the oil should be mixed with as little alcohol as possible, though, of course, the process of penetration takes a longer time. Other substances might be tried for this purpose, such as clove oil and glycerine; but the author has not carried out investigations in this direction very far, and cannot speak with any degree of certainty in the matter.

The beneficial effect which anilin oil seems to exercise upon suppurative affections of the middle ear is probably due to its power of extracting water from the tissues, the same principle, in fact, as that to which rectified spirit owes its value. Anilin oil dehydrates more slowly, however, and is also more slowly absorbed; further, it is not so volatile, and its effect is less violent, but lasts longer. In practice it will be found that the mixture of equal parts of anilin oil and spirit is very suitable. Ten or 15 minims may be dropped into the ear and left there in the usual way once or twice daily. Various antiseptics may be dissolved in the solutions, but they do not seem to do much good, and some of the more powerful ones may do harm. Anilin oil seems especially indicated in cases where there are cholesteatomatous masses and much debris. It softens these masses, and aids in breaking them down probably by its great power of dissolving fats and oils.

The method of producing local anesthesia described in this paper is, of course, applicable to other mucous surfaces. The author used it for throat work; and although there is at first a slight burning sensation, the subsequent anesthesia is more complete than with the aqueous solution. A 5 per cent solution is quite strong enough for throat work, and, owing to the large surface for absorption, he never uses it stronger. Another useful solution in throat work is a 5 per cent solution in equal parts of glycerine and rectified spirit.

The writer is indebted to Professor Stockman for some interesting facts concerning the pharmacology of anilin oil. Of these, the most important is that the medicinal dose is 7 minims. Care therefore should be taken that not more than this amount may be absorbed, though in the ear such a contingency is very unlikely.

STCLAIR THOMSON.

Diphtheria in the Horse—LOUIS CORBETT—*Lancet*, August 25, 1900.

On May 22, 1900, Dr. A. Mearns Fraser, the Medical Officer of Health of Portsmouth, supplied a culture of a bacillus which he had obtained from the nasal discharge of a pony. The history was as follows: A little girl having fallen ill of diphtheria, Dr. Fraser, while seeking the source of the infection, found that a pony belonging to the child's father was ill with a purulent and slight sanguinous discharge from its nose. Subsequently the animal suffered from enlargement of the glands under the tongue and laryngeal obstruction, with difficulty of breathing and retraction of the abdominal wall, and a bacillus obtained from the nasal mucus having been pronounced morphologically indistinguishable from the diphtheria bacillus the animal was killed.

The bacillus isolated from the culture sent had the usual appearance and habit of growth of the bacillus diphtheriæ. It belonged to the short variety. It did not liquify gelatin, it formed acid in media containing glucose, it clouded beef-broth and subsequently cleared it, and, like many diphtheria bacilli, freshly isolated from man, it formed only a scanty film on the surface. It was pathogenic to guinea pigs, causing local hemorrhagic edema and the general symptoms which are seen in these animals when they are inoculated with the bacillus diphtheriæ. It formed a powerful toxin, the filtrate from broth cultures causing a little edema at the seat of inoculation, followed in about ten days by falling out of the hair in the neighborhood, widespread hemorrhagic edema and necrosis of the tissues immediately affected, or death, occurring sometimes within twenty-four hours, according to the quantity of poison injected. The effect of injecting large doses of living culture, or even 100 fatal doses of filtrate was completely neutralized by diphtheria antitoxin.

Experiments were carried out which placed it beyond doubt that the bacillus obtained by Dr. Fraser from the pony was a true diphtheria, and it is concluded that the horse is liable to nasal and laryngeal diphtheria. The discovery is not only of practical but also of scientific importance, because it has a direct bearing on the question of the origin of antitoxin.

The fact that diphtheria antitoxin is present in many horses in this country and on the Continents of Europe and America suggests that diphtheria is a common disease among these animals; and this is in accordance with the well-known susceptibility of some of them to the action of diphtheria toxin. It is therefore possible that the horse may be found to play a not inconsiderable part in the transmission of diphtheria.

STCLAIR THOMSON.

Carcinoma of the Tonsil—E. A. MONTENYOHL—*Internal. Journ. Surg.*, July, 1900.

After remarking that of all the tissues of the body that are invaded by the ravages of cancer, the tonsil is the last tissue to be implicated, the author reports a case occurring in a woman aged forty-four. At the first examination he found a condition of affairs ordinarily seen in hypertrophied tonsil on the left side. Upon palpation there was a feeling of extreme hardness, and, on account of the marked induration and age of the patient, he suspected a malignant condition. Later he became convinced of this, but the patient would not permit operation. In less than a year her condition was desperate, breathing difficult, and the characteristic carcinomatous cachexia well marked while the glands of the neck were much enlarged. Patient died thirteen months after the first examination and microscopic examination of the growth showed it to be a typical epithelioma.

EATON.

A Case of Sudden Blindness Subsequent to Cauterization of the Nose—A. R. BAKER—*Cleveland Med. Gazette*, Nov., 1900.

Patient a man of thirty-one years, and married; no syphilitic history. Middle turbinated body on right side cauterized for what was diagnosed as hypertrophic rhinitis, followed in a week by a second cauterization. Pain developed on same side of face and back of eyeball. Two decided chills and a rise in temperature were present, and with a tendency to somnolency.

Three weeks later blurring of sight of right eye, which gradually progressed, when, after three days, total blindness was present. Three days following this dimness of left vision became apparent.

A large, offensive smelling, grayish-green slough filling the right nostril was removed with difficulty, leaving a bleeding, ulcerated surface.

Patient put on iodide of potassium and bichloride of mercury, increasing doses. On the fourth day improvement commenced, and in six weeks' time his vision was again normal.

STEIN.

Excision of External Carotid for Inoperable Epithelioma of the Floor of the Mouth—J. A. BLAKE—*Internat. Journ. of Surg.*, Nov., 1900.

The aim of the operation is to cut off the blood supply to the mouth to a certain extent. The author quotes Dawbarn as operating by this method twenty-four times with good results. In the case of epithelioma it is done as a palliative of pain. Both external carotids are excised with an interval between. The technique of the operation is described.

EATON.

The Present State of Our Knowledge of Asthma, etc.—W. A. WELLS (Washington)—*N. Y. Med. Journal*, Oct. 2, 1900, and Oct. 20, 1900.

The pathogenesis of asthma has narrowed down to two factions—those who believe that vasomotor disturbances in the pulmonary circulation is the essential cause of the attacks; and, secondly, those who hold that the asthmatic paroxysm is due to spasm of the bronchial muscles.

The nose being so richly supplied with filaments of the sympathetic, derived from the sphenopalatine ganglion, is probably the most common source of reflex asthmatic attacks.

That the mind exerts a potent influence in this disease is shown by these cases which are plainly due to strong emotional shock.

In this very interesting and exhaustive paper the author divides the treatment of the affection into two parts: (a) treatment of the paroxysm and (b) treatment according to cases.

For the paroxysm a hypodermic injection of morphia and atropia is the standby; pilocarpin, hydrochloride of hyoscine, and ether have been employed with good results in the same manner. For those suffering from the uric acid diathesis, the author extols the internal administration of piperazine. Lithia salts can be given during the intervals.

LEDERMAN.

Hypertrophy of the Turbinated Bodies, etc.—C. R. HOLMES (Cincinnati). *N. Y. Med. Journ.*, Sept. 29, 1900.

Where the snare and caustics fail to give satisfactory results the author removes the obstructing turbinal with a long slender snare. His object is to produce a bone scar which will permanently prevent the lower fossa from being occluded. Beckman's scissors have also proven satisfactory in operations upon the turbinates. The author further remarks that these operations are spoken of in too light a manner by operators to their patients. He avoids packing the nose after the operation, but insists upon the patient remaining in the hospital or at rest for two days or more. Attention is called to the preliminary packing of the nose with cocaine, for much depends upon this procedure for the painlessness of the operation. As little of inferior turbinal should be removed as is consistent with the restoration of sufficient breathing space.

Hypertrophy of the Turbinated Bodies, Etc.—C. R. HOLMES—*N. Y. Med. Journ.* (Continuation) Oct. 13, 1900.

In this number the author's excellently illustrated paper is concluded.

Wet sections are photographed, and the steps of the operation carefully detailed. The author's duck-bill scissors for removing the turbinates are shown.

Attention is drawn to the relation of inflammation of the turbinates to pharyngeal and middle ear catarrh.

The author never operates upon both sides of the nose at the same sitting.

LEDERMAN.

Bullous Enlargement of the Middle Turbinals (Concha Bullosa)

J. P. CLARK (Boston) *N. T. Med. Journ.*, October 20, 1900.

Four cases of this interesting condition are recorded. This enlargement is more frequently found in the female and gives rise to headache, sometimes accompanied by a sense of pressure in the nose. The pain is generally of a neuralgic character and may take the form of a hemicrania.

The diagnosis is readily made on examining the nose and finding a rounded swelling situated in the region of the middle turbinal, which is not soft to the touch.

Removal with the cold wire snare, conchotome or cutting forceps is the only rational treatment. Hemorrhage is usually insignificant.

LEDERMAN.

Displacements of the Eyeball by Disease of the Frontal and

Ethmoid Sinuses—Two Cases—S. D. RISLEY—*International*

Med. Magazine, October, 1900.

The first case was a boy of eleven years, in good health, but with his left eye displaced outward and slightly downward. An exostosis of the orbital rim in the region of the lachrymal sac and a cyst of the lachrymal sac existed. The duct into the nose was opened. This condition began three years before. On operation the ethmoid cells were found distended and their wall encroaching upon the orbit. The cells were opened allowing an escape of a glaring and lead-colored substance. The wall was forced back into place and the parts drained, recovery taking place rapidly. Examination of the nose and throat at no time revealed anything of importance.

The second case was one of marked exophthalmos with downward and inward displacement of left eyeball, in a mulatto woman of fifty-two years. The trouble existed nine years. Five years after appearance it improved very much under large doses of iodides, but after nine years was worse than ever. Palpation revealed a firm nodular mass occupying the upper and outer two-thirds of the orbit. On operation this mass was ruptured in an effort to dissect out, and allowed the escape of a large quantity of dark, lead-colored glairy substance without odor. A probe passed from this cavity into the frontal and ethmoidal sinus. An incision was made over the bridge of the nose and an opening effected into the frontal and extended into the ethmoid cells and these were then drained through the nose. The eyeball resumed its normal position, is perfectly healthy and has good vision. One of the interesting features in both of these cases is the lack of any sign or symptom of the sinus trouble by thorough examination of the nose. It would have been interesting to have had both a microscopical and bacteriological examination.

STEIN.

Vertigo of Meniere—URBAN PRITCHARD (London)—*Journ. of Laryngol.*, Sept., 1900.

In a very practical paper upon this subject the author divides the affection into two classes:

The apoplectiform, when it occurs, is a severe seizure, which at once practically destroys the auditory function of the ear attacked. The lesion being probably a hemorrhage or a severe congestion, and may involve the anterior as well as the posterior labyrinth.

The second class is the epileptiform, which is characterized by recurrent attacks, and tends to run a course of two or three years gradually passing off, as the function of the ear becomes destroyed. These variations are not necessarily connected with cerebral disease of similar names.

Meniere's vertigo is associated with middle ear catarrh. Bromides and hydrobromic acid, together with rest and tonic treatment, plus local attention, will often afford great relief.

LEDERMAN.

On the Ring of Waldeyer Considered as a Road of Entry for Microbial Affections—PIRERA—*Archivii Italiani di Laryngologia*, April, 1900.

From experimental work the author arrives at the following conclusions:

- (a) There is no absorption by the tonsils.
- (b) Absorption is more affected, though not exclusively, by the lacunæ.
- (c) Saprophytic micro-organisms pass through like granules of coloring matter, and perhaps more easily.
- (d) Pathogenic germs (*staphylococcus aureus*) have shown greater diffusion in a normal tonsil.
- (e) It seems to be necessary that the structure of the tonsillar parenchyma should be intact for the gland to be more infiltrated, and on the other hand the stage of hyperplasia or still more a phase of fibrosis may contribute to arrest the micro-organisms in their work of diffusion and obstruct the absorption of the extraneous matters on the part of the tonsils.
- (f) The palatine tonsils may be regarded as one of the most accessible routes of entry for microbial affections.

FERRERI. (Translated by St Clair Thomson.)

Papilloma in the Vestibule of the Nose—REALE—*Archivii Italiani di Laryngologia*, April, 1900.

On the inner wall of the right naris a mass was observed as big as a centimeter, and a millimeter in height, bright red, and recalling the clinical aspect of an acuminate condyloma. The patient had several condylomata on the prepuce. Prof. Massei saw the patient with the author and confirmed the diagnosis of acuminate condyloma. This was confirmed by the microscope.

FERRERI. (Translated by St Clair Thomson.)

BOOK REVIEWS.

Bulletin de la Societe Belge D'Otologie, de Laryngologie et de Rhinologie, Publie par les soins du Bureau—Dr. L. ROUSSEAU, President; Dr. Henniebert, Secretary. Fifth year. Brussels: C. Bulens, 75 Rue Terre-Neuve, 1900.

We are indebted to our colleague, Dr. Henniebert, for so promptly publishing and forwarding to us the transactions of the Belgian Society of our specialty, containing the full reports of the proceedings at the annual meeting held at Brussels in June last. Some of the communications have already been scattered through the various journals, but every student of Oto-Laryngology should have this complete collection in his library. The set subjects for discussion—on the antitoxin treatment of diphtheria and on lupus of the nose—are most fully treated, and the debates contain many points of interest. The communications are chiefly of a clinical and practical character and are not too prolix. Some of them are well illustrated.

ST CLAIR THOMSON.

A Treatise on Diseases of the Nose and Throat. By ERNEST L. SHURLEY, M.D., Vice-President and Professor of Laryngology and Clinical Medicine, Detroit College of Medicine; Laryngologist and late Chief of Staff, Harper Hospital; Consulting Laryngologist, St. Mary's Hospital, etc. Octavo, pp. xvii—744. Cloth, \$5.00; sheep, \$6.00. New York: D. Appleton & Co. 1900.

Perhaps none of the recently published text-books on diseases of the nose and throat are as well adapted to the needs of the general practitioner and to the specialist alike as is this volume. The author is well qualified, not only as an experienced laryngologist, but as a general practitioner of long-standing, to present these specialties for consideration along the broadest lines. It is this feature which adds especial strength to the work, for each subject is viewed, not only in its limited field, but in its relations to the general system.

Another feature which deserves special comment is the completeness with which the several subdivisions of the subject are considered. Among these special mention should be made of the excellent chapters on acute rhinitis, diphtheria, a summary of our present knowledge of hay fever, the several neuroses, and the question of tuberculosis of the upper-air passages, mainly embodying the experiences of the author. The chapter on intubation is of unusual value because it offers the clearest and best presentation, together with a series of beautiful full-page illustrations of the technique and pathology of this subject.

Attention should also be directed to the author's numerous references to the researches and reports of American investigators to which he gives preference.

The laryngologist will recognize the many merits of this volume without further comment, and to the general practitioner it is heartily recommended because of its broad and clear conception of the special fields with which it is concerned. The publisher should be complimented for the unusually clear execution of illustrations and excellent general typography.

M. A. G.

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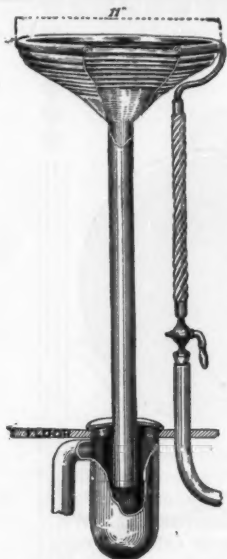
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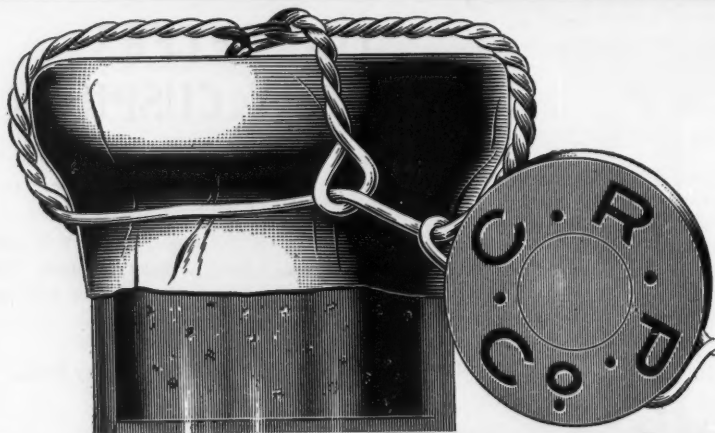
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When the vapors of Formalin are employed in the treatment of zymotic diseases, or for ordinary air purification and sterilization, one pastil should be constantly evaporated in the upper cup of the lamp. When rapid vaporization is required the upper cup should be removed and the pastils placed directly in the lower receptacle.

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Eucaine "B" has been extensively used in all branches of surgery, dentistry, ophthalmology, etc. Favorable reports concerning it have come from a host of practitioners on both sides of the Atlantic.

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CONTENTS.

ORIGINAL COMMUNICATIONS.

Dentigenous Cysts. By Frederic C. Cobb, M.D., Boston, Mass	397
Notes on Turbinotomy. By Chevalier Jackson, M.D., Pittsburg, Pa. (Illustrated) ..	403
An Adenoid Curette. By Chevalier Jackson, M.D., Pittsburg, Pa. (Illustrated)	406
Treatment of Acute Inflammation of the Middle Ear. By S. S. Bishop, M.D., Chicago.....	407

SOCIETY PROCEEDINGS.

New York Academy of Medicine	409
British Medical Association	416
American Laryngological, Rhinological and Otological Society	435
Thirteenth International Medical Congress—	
Section of Laryngology and Rhinology.....	443
Section of Otology.....	449

INDEX TO VOLUME IX IN THIS NUMBER.

(Continued on Page 7.)

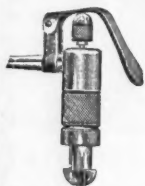
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CONTENTS—Continued.

BIBLIOGRAPHY.

I. Nose and Naso-Pharynx.....	451
II. Mouth and Pharynx.....	452
III. Accessory Sinuses.....	452
IV. Larynx and Trachea.....	453
V. Diphtheria, Thyroid Gland, Esophagus, etc.....	454
VI. Ear.....	454
VII. Mastoid and Cerebral Complications.....	454
VIII. Therapy.....	454
IX. New Instruments.....	454
X. Miscellaneous.....	455

ABSTRACTS.

Selected Abstracts.....	456
-------------------------	-----

BOOK REVIEWS.

Bulletin de la Societe Belge D'Otologie, de Laryngologie et de Rhinologie, Publie par les soins du Bureau.....	464
A Treatise on Diseases of the Nose and Throat. Shirley.....	464



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NOTE.—Under this caption we propose to call the attention of the readers of *THE LARYNGOSCOPE*, from month to month, in a brief descriptive way to the line of new instruments and apparatus suggested by our advertising patrons.

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FORMALDEHYDE DEODORIZER.—In a busy office practice the necessity for frequent fumigation of our waiting rooms and consulting rooms is often overlooked. In an editorial which appeared in *THE LARYNGOSCOPE* several years ago, special attention was given the question of office fumigation, and with the advent of Schering's Formalin Lamp, as made by Schering & Glatz (adv. page 4), and the more recently presented Rauschenberg's Formaldehyde Deodorizer, as manufactured by Whittall, Tatum & Co. (see adv. page 13), it becomes an easy matter to give this question more practical attention. We think it will justify our readers to investigate.

ELECTRO-PLATED LARYNGEAL MIRRORS.—If there is one thing among the laryngological instruments in daily use which has given our confreres much cause for complaint, it is the Laryngeal Mirror. The sterilization of the average mirror has been a difficult matter, owing to the fact that it could not be subjected to boiling, and when immersed in antiseptic solutions for any length of time the mirror is soon ruined. J. C. Ferguson, Jr., of Philadelphia (see adv. page 13), seems to have solved the problem by introducing an Electro-Plated Laryngeal Mirror. This mirror is impervious to moisture and is guaranteed to stand boiling for sterilization.

ELECTRIC AIR COMPRESSOR.—In the evolution of the atomizer and the source of compressed air for its operation, we have had the rubber hand bulb, the piston hand pump and the hydraulic compressor. The latest improvement in this direction is the Electric Air Compressor, as constructed by the Victor Electric Co. of Chicago (see adv. page 4). Wherever electric power can be supplied, this pump is available. We have seen it in operation and can testify to its practical application, easy manipulation, simplicity and cleanliness.

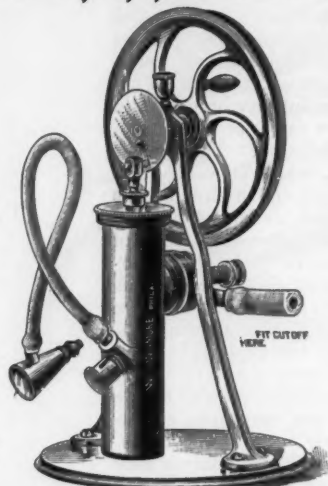
A NEW SPECIALISTS' CHAIR.—One of the latest novelties brought to our attention is the Wellington Specialists' Chair. For detailed description see adv. in this issue, page 13. This appeals to us as a practical piece of furniture, and you may be interested in seeing a sample chair at your surgical supply house.

THE SPECIALISTS' OFFICE CABINET.—There are cabinets and cabinets, but the cabinet manufactured by the reliable Allison Co. (see adv. page 2) as designed by our confrere, Dr. Edwin Pynchon, is the most compact and complete piece of furniture adapted for the consulting room of the eye, ear, nose and throat specialist.

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Remarks on the Treatment of Diseases of the Ear—DR. ZAALBERG —*Monatsschrift für Ohrenheilkunde*, No. 12, 1898.

The author claims to have had most excellent results with equal parts of boracic acid and aristol in the treatment of chronic suppurations of the middle ear with large perforations. He has also employed this combination after radical operations upon the ear. The method was insufflation after cleansing. It was noticed that the secretion was reduced to a minimum, the surface continued smooth and only in rare instances were granulations excessive. Cicatrization was much more prompt than under the application of simple tampons. Curettage was seldom required and the same of cauterization. The powder remains in place forming a covering for the wound surface. This is due to the drying of the secretion or it is possible that the aristol forms a pellicle. The drug seems to exert a mild, uniform, but constant pressure upon the wound preventing the excessive formation of granulation. Its astringent action also probably plays a part. The author has used it in as many as twenty cases.

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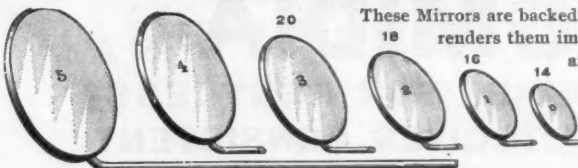
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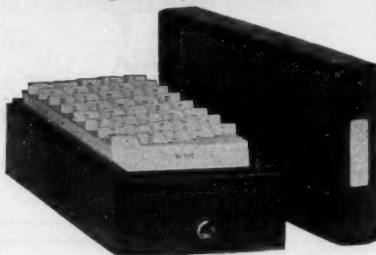
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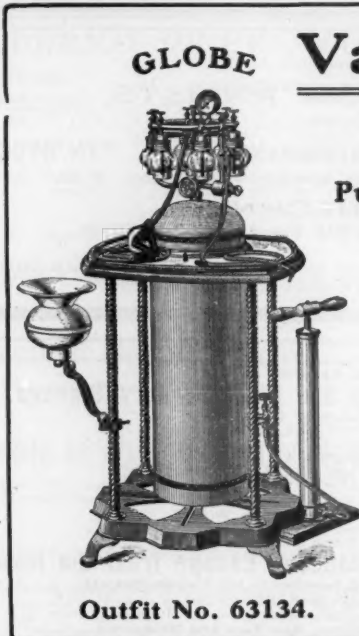
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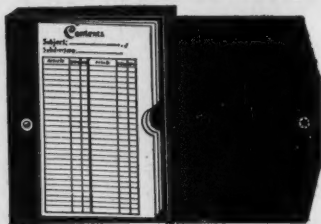
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